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Elements of Business Administration

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To
Deans
Thomas H. Carroll of the University of North Carolina
and
Robert E. Stone of Syracuse University
as
Fellow Californians
who did much to stimulate the writing of this text

Preface

A real understanding of business administration as the process through which goods and services are made available to consumers in our economy necessarily involves awareness of the total environment—political, social, cultural, and economic—within which business itself operates. Considering the economic environment apart from the others brings about a narrow and incorrect view. One cannot truly study history, for example, without giving thought to the religious, social, cultural, economic, and political influences that affect man; mere assemblage of dates and events is quite inadequate. Thus, there is a need to consider the field of business administration in the light of the total situation in order to understand fully this highly important subject.

A major basis for this total consideration is the underlying theme that "business is people." Although human nature in all branches and stages of the business world is basically the same, it must still be dealt with in fairly concrete situations in order to be understood.

Thus, I have selected the radio-television field as a frame of reference. For in focusing upon a specific target an air of realism is had, thereby helping to integrate the various elements of business. It has been my constant aim in drawing material from the vast and dynamic radio-television field to select situations that are representative of the significant business problems—problems that must be faced by firms and individuals in all lines of commercial endeavor.

Reasoning power developed through analysis of cases dealing with elemental business problems will prove of greater significance to the reader than the mere absorption of detailed facts concerning American business enterprise. An orthodox, survey type of book typically lifts its many facts out of context and presents them as abstractions for memory exercises in an effort to obtain complete coverage. In ELEMENTS OF BUSINESS ADMINISTRATION we shall pay little attention to much of the descriptive data of the branches of American business. We shall strive instead for a level of integration that will generate within readers' minds a "feel" for business administration as a highly significant part of the over-all functioning of human society.

Acknowledgments

Acknowedgment is gratefully made to . . .

Allen B. Dickerman, who taught earlier versions of this subject in Syracuse University classes to French, British, and American day and evening students, and whose chapter by chapter comments led to significant improvements in content and in approach.

Jeanne Bassett Hurley, who reviewed ideas in their early stages, and whose initial reactions usually meant life or death to individual concepts developed by her husband.

Morris III, James, and Richard Hurley, who gave up thousands of hours for the writing of this book, and whose presence in the home kept their father at his task.

Morris E. Hurley, Sr., who read his son's literary endeavor with a critical eye, and whose seasoned judgment greatly influenced the style and content of the final manuscript.

Myrtie Trowbridge, Wanda Socha and Ruth Eachus, who typed thousands of pages of manuscript and lithograph material, and whose warm interest in the project has meant much to the author personally.

Other friends and colleagues who have contributed generously to the completion of this book. They include Dean Thomas H. Carroll of the School of Business Administration at the University of North Carolina, Dean Robert E. Stone of the College of Business Administration at Syracuse University, Professor James D. Scott of the School of Business Administration at the University of Michigan, Professor Franklin E. Folts of the Harvard Graduate School of Business Administration, and Vice President Walter R. G. Baker of the Electronics Division of the General Electric Company.

A dozen known associate editors and anonymous readers of manuscripts for Prentice-Hall, Inc. And to many dozens of individuals and firms that kindly granted permission to quote ideas or to reproduce photographs.

Introduction—*The Plan of the Book*

Part A, entitled "Change and Progress in Economic and Social Life," describes significant events and trends of the American and world scene during the past century. These occurrences are described, not from the hindsight vantage point of post-1950, but from the point of view of, and through the characteristic news media used by, observers posted at three benchmark years during the period.

Thus, in chapter 1, America enters the 20th century in 1901 through the "reportorial eyes" of Thomas Wood, editor of the *Midvale Junction Weekly.* The events of the post-Civil War portion of the 19th century are described as they actually appeared in newspapers and magazines of January 1, 1901, vintage. Post-1901 hindsight has been used to select what appears significant in the light of later events, but the events themselves are described in contemporary terms.

Similarly in chapter 2 a mid-stream report covering the period 1901 through 1925 is rendered by commentator Bob Beale speaking on New Year's Day, 1926, over pioneer radio station KMID. Events of the "Teddy" Roosevelt, Taft, Wilson, Harding, and Coolidge regimes are seen with the hindsight of 1926, not that of more recent decades.

Again in chapter 3 a report on change and progress during the quarter-century from 1926 through 1950 is presented over television channel WHER, Midvale, by narrator John Smith III. The historic changes associated with Coolidge Prosperity, the Big Crash, the Great Depression, the New Deal, World War II, the Post-War '40's, and Post-Korea '50 are viewed with the perspective of a January 1, 1951, observer. Events occurring more recently are omitted from this historical review.

This opening section on change and progress is by no means "peripheral" or "secondary" in importance. Chapters 1 to 3, while comprehensive in scope, can provide coverage for only the more significant occurrences of each period reviewed. In portraying distinguishing characteristics of the various periods, the chapters attempt to convey to the reader something of the "flavor" of each period as it might have appeared to a contemporary living through those times. It is through such simulated realness that this book will develop in the reader a "feel" for business administration.

Part B, entitled "Business Enterprise Is People," develops the theme that in business enterprise particular people are continually planning and performing services for other people in our economy. The nature and content of business enterprise—the substance inside and not just the label on the bottle—can be brought out more meaningfully by dealing intensively with one important segment of business enterprise, rather than by attempting to cover superficially in one grand "blur," business as a whole. The radio-television industry serves as the vehicle for bringing business enterprise into focus within this section and for bringing business administration into focus within succeeding sections of the book.

The radio-television industry is familiar to us all, as its product is seen and heard in virtually every home. Yet within the industry may be found new and startling developments. The radio-television industry is young and is rapidly growing. Although essentially a development of the 20th century, the industry has many old and out-

moded segments. A modern giant whose component members are characteristically large and powerful, it encompasses many small business firms ranging all the way down to "one-man" enterprises. The radio-television industry is a vigorous leader within our expanding economy. Its growth and development furnish the ingredients for a dramatic story of success. Yet within it may be found spectacular instances of business failures. In short, this single industry is sufficiently comprehensive in scope to serve as an integrated base for systemic exploration of all major aspects of the broad field of business administration.

The activities of inventors, business promoters, and business administrators within the radio-television field are related in chapter 4, in an account of the growth and development of RCA. The activities of this large-scale business enterprise over several decades exemplify the progress of radio-television.

The discussion is broadened in chapter 5 from the single RCA firm to the general economic setting for the individual enterprise. Fundamental tenets and characteristic features of capitalism in the United States are set forth in this chapter. Radio developments are cited to illustrate the impact of the economic system upon the individual firm and the individuals comprising it. Problems confronting the world economy are also explored in the concluding section of this chapter.

Chapter 6 is entitled "A Dynamic View of the Individual Firm: G.E." This study endeavors to simulate in some measure the experience that might be gained by an individual who is employed by a specific firm. This chapter attempts to create a word-picture of important human components of the individual firm. Specific reference is made to the Electronics Park plant of the General Electric Company near Syracuse, New York. The G.E. labor force and management team are described in this chapter. The Electronics Park plant and equipment form the subject matter for chapter 7. The method followed in this entire section is that of gaining insight into business problems through a firm grasp of the functioning of the individual business unit.

Part C, the core of the book, takes up the basic "Elements of Business" by subject areas. The teaching emphasis throughout the section reflects a "core curriculum" philosophy of balance and breadth in education for business. The chapters serve to point the way toward later "area" or specialized courses as well. The interdepartmental nature of important business problems is constantly in evidence during this presentation of the functions and methods of individual departments. Although the material presented in each chapter tends to be oriented toward specific situations within particular organizations, the situations selected are designed to be representative of the activities characteristically carried on by the departments concerned.

As the text progresses through the "elements of business" and into "business and public policy," less and less dependence is placed upon the radio-television industry alone. The radio-television focus is not lost. Nevertheless this industry gradually takes its place as just one of many broad lines of industry that together comprise the American business enterprise system at mid-century.

Chapter 8 opens this basic "Elements of Business" section with a discussion of problems and procedures in commercializing inventions and ideas through business organization. Relative advantages and drawbacks of single proprietorships, partnerships, and corporations are set forth in this chapter.

Chapters 9 and 10 take up the vital, yet often neglected, field of production. Chapter 9 includes "shop-level" material on blueprint reading, machine tool operation, and alternate metal-working processes. In chapter 10 may be found sections on plant layout, methods analysis, motion and time study, worker instruction, production control, and balanced plant utilization. Chapter 11 on personnel and industrial relations focuses upon the actual job of the personnel

relations manager. It also includes material on the development of labor unions and on collective bargaining practices.

Chapters 12 and 13 are devoted to the important subject areas of marketing and advertising. The marketing process is described in chapter 12, and marketing-advertising policies are discussed in chapter 13. Again the approach is broadly conceived, although a number of the illustrations selected pertain to representative market policies and problems of the radio-television industry. Case Section C, which relates to chapter 13, draws more heavily upon the case method in depicting the roles of advertising and of sales promotion in the radio-television marketing process. Representative problems faced by advertising and sales managers are presented in integrated fashion through reference to the Philco Corporation and to the Electronics Department of the General Electric Company.

The broad area of finance is opened up in chapter 14 with a discussion of financial institutions and practices. Problems of financing current operations and of planning for long-run needs of a going concern receive more emphasis than do static questions of capital structure and security market issues. This introduction to financial management is backed up by materials in chapters 15 and 16 on techniques of management communications and controls. Chapter 15 explains the functions of the basic tools of accounting and statistics. Chapter 16 applies budgetary control techniques involving accounting, statistics, and finance to specific situations within the radio-television industry. The uses of and importance of oral and written communications within a business organization are also set forth.

The "Elements of Business" section concludes with two chapters referring to over-all problems of administering a business unit. Chapter 17 discusses basic principles and problems of organization planning, such as delegation of authority, establishment of responsibility, and maintenance of flexibility. Types of internal organization useful in various situations are also set forth. Chapter 18 sketches basic techniques of business problem analysis that are useful for administrators. These techniques include sizing up the situation, setting policies, planning for action, staffing the organization, and executing moves. The importance of sequence and timing and the role of the follow-up are stressed. The need for frequent reappraisal to adjust for changing conditions is also emphasized.

Part D explores important questions of "Business and Public Policy." The three chapters comprising this section emphasize the growing importance of the relationship between business and government. They attempt to put into perspective the different types of relationships that actually prevail. The discussion is focused at an operational, rather than at an exclusively philosophical, level.

Chapter 19 is concerned with public relations in business and with important questions pertaining to social responsibilities of business. Some fundamental tenets of a long-run philosophy of responsible business leadership are proffered. Chapter 20 explores the inter-relationships of business and government primarily in terms of points of contact. Government aids to business and government limitations upon business are discussed. The problem of freedom and intervention in the economic sphere is developed in chapter 20 as one of degree rather than kind in our mixed capitalistic economy. In chapter 21 the basic role of government in economic life is considered with specific reference to the American economy at mid-century.

The main part of the book concludes with a statement summarizing "Some Objectives of Business" in broad social terms.

A series of analytical case problems follows the main body of the book. These cases deal with major areas and tools of business, such as production, industrial relations, marketing-advertising, finance, accounting. Over-all case studies in business policy formulation and in the social responsibilities of business are also included in

this analytical section. Individual cases are cross-referenced to specific pages in the body of the book.

The discussion questions that accompany each chapter of this book are designed to provide the basic method through which one may grasp the essentials of business administration. The questions scrupulously avoid calling for a mere repetition of "facts" that may be looked up in the text itself. Each question arises out of a situation that is described on specific pages, and these page references are listed. The facts presented in these pages are seldom of prime importance in and of themselves. They serve as useful evidence, upon the basis of which opinions can be formed as to the merits of the issue that is raised for discussion. Although page references are given for each question as a handy guide for study and review, acceptable "answers" to the questions must still be "generated" in readers' minds. These answers cannot simply be parroted back from the book itself.

Emphasis throughout is placed upon creative use of available information in so far as it is pertinent to the reaching of a reasoned decision concerning the merits of a specific issue. The beginner in business will soon learn as he takes up his career that business administration is vitally concerned with this type of reasoning. Business managers typically must act before all the pertinent facts bearing upon a specific case can be known and digested. Part of the skill that an administrator strives to develop is that of sensing, through the "feel" of the incomplete data on hand, what the chances are for success of each of several alternative courses of action. The probability of success and the degree of risk involved do not factor out automatically through the mere inspection of certain component facts. Rather, they are arrived at through a complex process, partly conscious and partly subconscious, of weighing known facts, of sizing up the probable importance of gaps in available knowledge, of relating the current set of facts to past experience, and of relating the central problem at issue to other associated problems and considerations.

Ultimate success in business hinges increasingly, not upon completion of some prescribed training program, but upon the firm determination of the career man to pursue a self-disciplined, life-long course pointing toward his own continuous growth and development as a businesslike citizen in society.

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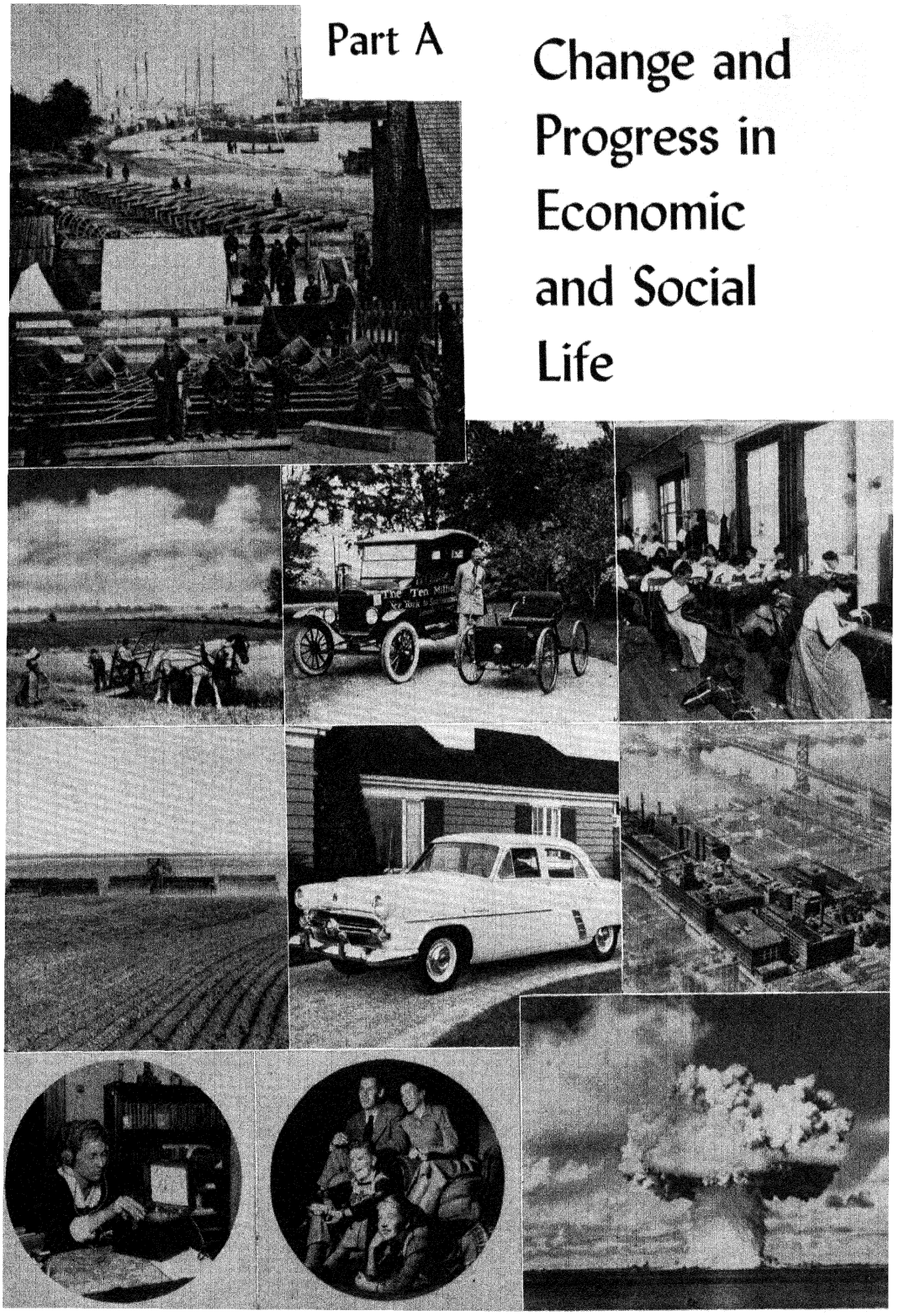
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Part A

Change and Progress in Economic and Social Life

Part A. Change and Progress in Economic and Social Life

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The three chapters comprising this section dramatize the impact of change and progress upon American economic and social life by depicting key characteristics of three historical periods as reported to a typical family over several generations.

Description of Montage Photographs	*Courtesy*
Civil War cannon, Peninsular Campaign, 1862	*Brown Brothers*
Old farming scene, showing McCormick Reaper	*Brown Brothers*
Henry Ford with 1896 and 1924 cars	*Ford Motor Company*
Old factory scene, showing sweatshop labor	*Brown Brothers*
Modern farming scene, tractor and five grain drills	*International Harvester Company*
Modern Ford Customline Sedan	*Ford Motor Company*
Modern factory scene, Camden plant of RCA	*Radio Corporation of America*
Girl with earphones, and early radio	*Brown Brothers*
Family watching TV	*Radio Corporation of America*
Atomic blast at Bikini, post-World War II	*Joint Task Force One, and Atomic Energy Commission*

1
America Enters the Twentieth Century: 1901



MIDVALE JUNCTION WEEKLY

January 1, 1901

The dawn of Day One in the 20th century brings to mind the dawn of that New Day, which the Pilgrim Fathers sensed nearly three centuries ago, as they landed at Plymouth in the face of unknown challenges to establish a brave new world. . . . The development of this great nation since those pioneering days must have exceeded a thousandfold their wildest expectations. Just as the events of the 18th and 19th centuries could not be visualized by our 17th century founders, it behooves us to remember that the events of the next half century will themselves confound the forecasters—be they prophets of doom or wearers of rose-tinted glasses.

The above words from the pen of Editor Thomas Wood of the *Midvale Junction Weekly* struck a responsive note in the mind of fellow townsman John Smith, as he relaxed in his favorite Morris chair after dinner on New Year's Day 1901. It happened that Smith was conscious of being a descendant, some fifteen generations removed, of the distinguished Captain John Smith of England and Virginia, whose landing preceded that of the Pilgrim Fathers by more than a dozen years. John agreed with Editor Wood about the achievements of the past, but smiled indulgently at his surprising humility in refraining from the usual forecast of the shape of things to come. After all, thought John, the rapid pace of progress during the last half century alone would point toward a breathing spell for years to come. Besides, the direction for future progress had been well established in recent decades, he felt. There remained now the somewhat simpler task of filling in details.

John thus allowed his thoughts free rein as his eyes took in key passages of Editor Wood's journalistic recap of American economic and social life, from the landings themselves down through some three centuries of toil and progress to the recent benchmark year 1900. He was particularly struck by events recounted for the post-Civil War period, in which he himself had lived. Moreover, John, Jr., who was about to graduate from school in June, had studied these matters in high school history and, in earlier talks, had aroused John, Sr.'s curi-

Photo at top of page: Admiral George Dewey, hero of Manila Bay, parades through New York City in 1900. (*Brown Brothers*)

osity about the meaning of certain terms that characterized a number of the dominant movements and trends of the times.

Now John, Sr., saw a chance to read for himself about the nation's past and present in Editor Wood's summary article. John adjusted his spectacles and resumed:

MIDVALE JUNCTION WEEKLY

January 1, 1901

WHERE WE STAND TODAY

by

Thomas Wood, Editor [1]

. . . This is fittingly a day for stocktaking, for reflection, and for sober resolution. What wondrous happenings have transpired since the founding of the colonies in America! The development of this great nation since those pioneering days must have exceeded a thousandfold their wildest expectations. Just as the events of the 18th and 19th centuries could not be visualized by our 17th century founders, it behooves us to remember that the events of the next half century will themselves confound the forecasters—be they prophets of doom or wearers of rose-tinted glasses. And yet how small, actually, the achievements of the past bulk when measured against the total potentiality of the human race! . . .

Economic Picture

Never before in the history of civilization has the average man possessed so much of worldly goods as does the American householder on New Year's Day 1901. Much of this amazing growth in "opulence" has taken place since 1880. During the 20-year period, 1880 to 1900, the population of the United States has increased more than 50 per cent, rising from 50,189,209 in 1880 to 76,303,387 in 1900. Yet, despite the tremendous adjustments called for by this great growth in numbers, the average share of economic goods belonging to each American in this increased population has more than doubled.

A few examples of truly astonishing growth may be shown first, and then may be listed "run of the mill" items, which are, nevertheless, spectacular in their own right. [See Figure 1-2].

"Economic Revolution"

The "economic revolution" that accompanied the Civil War of 1861–65 affected American life as deeply as did the great conflict itself. Every branch of industry, which in prewar days was predominantly local in organization, grew mightily as man was energized by war to

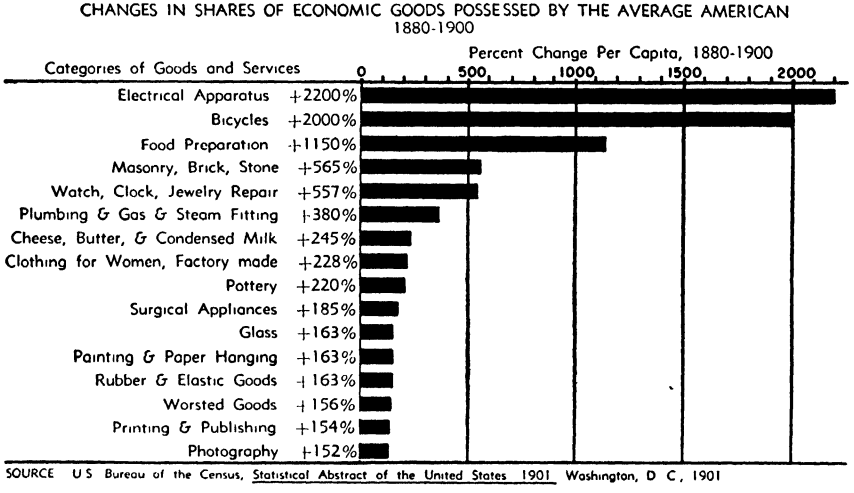


Figure 1-2

[1] The basic approach used in this simulated article is that which has been presented by Professor Arthur Meier Schlesinger in his book *Political and Social Growth of the United States, 1852–1933.* New York: The Macmillan Company, 1935.

achieve new triumphs over nature. Strong industrial leadership, active American inventive genius, abundant capital from abroad, spreading mass production, great natural wealth, and both cheap and plentiful labor—all these determine progress. They should be added to what the census officials of 1900 have recently called "America's favored position as the largest area in the civilized world . . . unrestricted by customs, excises, or national prejudice," containing a people who, because of their relatively high standard of living, have "a larger consuming capacity than that of any other nation." [2]

The rapid changes made by the economic revolution brought with them major dislocations in an already fluid American economy and society. The machine replaced the craftsman as the dominant factor in industry, and the gulf between owners and laborers widened significantly. The modern city with all its political, social, and economic problems became the focal point in American life. For the population in general, and particularly for city inhabitants, new gadgets, inventions, and other conveniences came upon the market to relieve the drudgery of ordinary living.

The great social, political, economic, and ethical issues of the day arising out of the "economic revolution" were popularly discussed in terms of the "money question," "tariff protection," "industrial monopoly," "political corruption," "immigration," "labor discontent," "agrarian unrest," "imperialism," the "unequal distribution of wealth," and the "adaptation of the constitution" to fit the needs of modern urbanized and industrialized living.[3]

The basic nature of this "economic revolution," at the beginning of the 20th century, can best be seen, however, through examination of the fundamental changes wrought in the broad economic areas of manufacturing, mining, agriculture, transportation, and communication.

Rapid Growth of Industrialism

The "economic revolution" from 1860 to 1900 brought about the most rapid change in manufacturing methods observable in history. Substitution of machines for men, of steam for water power, and of specialized labor for general craftsmen increased factory production enormously. From less than $2 billion in 1860, the output of American factories more than doubled in a decade and trebled in two decades. While factory employment tripled from 1860 to 1890, production increased fivefold, a relationship that indicates the influence of labor-saving machinery and improved methods. Less than 60,000 patents were granted by the United States Patent Office in all the years prior to 1860. Ten times this number were granted during the last 40 years of the century.[4]

The growth of American industry was astonishing, on a relative, as well as an absolute, basis. Before the 1880's, farming far outstripped industry as the chief source of national wealth. The census of 1890 gave first place to manufacturing, however, and the census of 1900 now shows that the value of manufactured goods is over twice that of agricultural products. The United States, which held fourth place among manufacturing nations in 1860, became the world's leading producer by 1894. In 1900, its output exceeded that of Great Britain and Germany combined.[5]

Mineral Development

The "economic revolution" was dependent upon the development and exploitation of coal fields and iron ranges, not only in the Appalachian Mountains, but also in the Midwest and, later, in the Lake Superior region. From 1860 to 1900, pig-iron output multiplied more than a dozenfold. Petroleum, the new liquid form of subsurface treasure, has had almost its entire development during this period, increasing more than a hundredfold in production from 1860 to 1900. Although gold production has declined steadily from its peak in 1854, large-scale silver mining in the Mountain States has resulted in a several hundredfold increase in national output.[6]

Revolution in Agriculture

The "economic revolution" in agriculture has come largely through the phenomenal expansion of the republic into the unoccupied lands of the Great West since the Civil War. The expanse of plains once occupied by wild

[2] *Ibid.*, pages 130–131. [3] *Ibid.*, page 131. [4] *Ibid.*, page 144.
[5] *Ibid.*, page 145. [6] *Ibid.*, page 146.

buffalo and hostile Indians has been divided into new states and territories, providing fresh resources for the national economy within a quarter century after settlement started. The Homestead Act of 1862 granted free farms of 160 acres to citizens who would occupy and improve the land. This act, coupled with the advent of the railroads and the crushing of the Indians, made possible rapid exploitation and settlement of the Western lands. Once the picturesque cowboy of the open range gave way to the homesteading farmer as the typical Westerner, the "agricultural revolution" gathered momentum. During the decade of the '70's, productive farmland increased by an area larger than the countries of Britain and Sweden combined. By 1900, it again increased significantly, by an amount equal to the British Isles and Scandinavia, with the Low Countries and Switzerland thrown in for good measure. The production of corn and wheat has quadrupled between 1860 and the present time, and for 20 years now, the United States has served as the greatest wheat-exporting nation in the world.[7]

This spectacular expansion in output has resulted primarily from the application of mechanical power and scientific principles to large-scale farming. With every family characteristically a landowner, there has long been a severe shortage of hired labor. It has been necessary for homesteaders to mortgage their future to the hilt in order to secure new, labor-saving farm tools. This venturesome attitude has stimulated inventions along mechanical lines and has recently encouraged scientific discoveries in regard to soil fertility, insect control, stock breeding, and animal care. So great has been the achievement of the West during the past 40 years that some credence may be given to the popular saying that "it is impossible to tell the truth about the West without lying."

Much of the rugged individualism and perennial optimism permeating our industrial economy today is a product of the Western frontier. The West has long absorbed and nurtured our most active and most restless spirits and has developed in us a national frame of mind that readily accepts challenging opportunities for individual initiative, enterprise, and achievement.

Railroad Network

The imagination of the entire population was stirred when the first steel bands linked

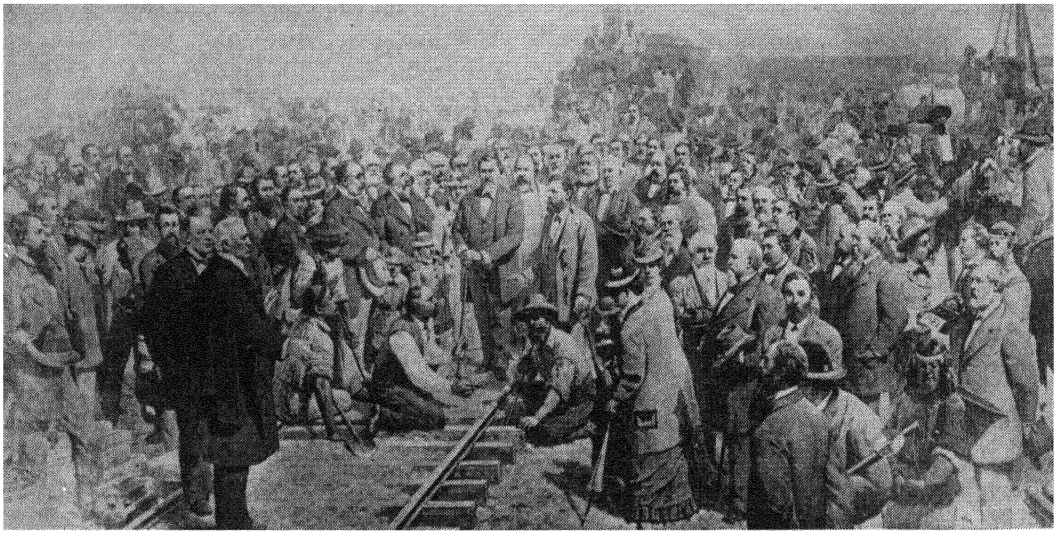


Figure 1–3: Governor Leland Stanford of California drives the golden spike celebrating the completion of the first transcontinental railroad with the joining of the Central Pacific and the Union Pacific lines at Promontory, Utah, in 1869. (*Union Pacific Railroad*)

[7] *Ibid.*, pages 133–134.

East Coast and West Coast with the joining of the Union Pacific and the Central Pacific railroads, at Promontory Point near Ogden, Utah, in 1869. By 1884, four transcontinental links were completed in the United States, while a fifth paralleled them in Canada. Meanwhile, a farflung network of rails expanded the mileage and improved the service of our national transportation system. From 30,000 miles of railroad in 1860, the mileage has risen more than sixfold, so that now at the turn of the century, there are 193,000 miles, a figure greatly exceeding the combined length of all the railways of Europe. Great railway systems now control the nation's trackage. Six major financial groups—Vanderbilt, Morgan, Harriman, Pennsylvania, Gould, and Hill—own fully half of our railway network. The federal government, in turn, has been attempting to regulate their activities for the past 13 years under the Interstate Commerce Act of 1887.[8]

Communications System

The harnessing of electricity by American and European scientists, notably our own prolific inventor, Thomas Alva Edison, has led to profound changes in communication. Edison's invention of quadruplex telegraphy in 1874, for instance, allows two messages to be sent simultaneously from opposite ends of the same line, thereby multiplying line efficiency. A second American inventor, Cyrus W. Field, applied the principle of the telegraph to trans-Atlantic cable communication in a great engineering achievement during 1866. Moreover, a quarter century ago, Professor Alexander Graham Bell of Boston University invented the first successful telephone.

At present, Western Union sends 170,000 telegrams daily and Postal Telegraph dispatches an additional 45,000 for a combined total of over 215,000 telegraph messages a day over 1,100,000 miles of wire, connecting some 30,000 offices in as many separate communities. This tremendous operation represents a sizeable increase of 25 per cent in message volume and 50 per cent in miles of wire during the past decade. It is fully twice as great in message volume and four times as great in miles of wire as was the telegraph business just 20 years previously, in 1880.[9]

From a mere 50,000 in 1880, the number of telephone subscribers has now multiplied twelvefold to 633,000 at the end of the century. Although many of these subscribers are commercial firms, it is estimated that one private family in every 50 now has this marvelous instrument at its command. Fully 25,000 American Bell Telephone Company employees serve the public through operation of 1,200 exchanges within as many separate American communities.

Growth of Modern Cities

The key centers in the new pattern of life that has swept over the country in the years since the Civil War are the great modern cities, which have sprung up across the land. Whereas in 1830, one out of 15 persons lived in towns and cities, and in 1860, the figure was one out of every six, today, two out of every five persons are inhabitants of towns and cities of 2,500 or more persons. Although no city had as many as a million residents in 1860, today, New York City enters the 20th century with well over three million. Chicago and Philadelphia are each over a million. St. Louis, Baltimore, and Boston are in the half-million metropolitan class. Early American cities simply resembled overgrown villages. The new urban centers have organized new services, however, such as full-time, paid fire departments, elevated trains and trolley cars, paved streets, water-works, and even public sewage and garbage disposal.[10]

The striking contrasts of poverty-stricken slums and rich town houses within a few blocks of each other have led to a notable increase in lawlessness, attributable in part to the inadequacy of police protection methods, but also to the collusion of city officials and organized criminals. The Tweed ring and Tammany corruption reported in New York City are simply well-known examples of what has been and still is a serious failure in our efforts to govern densely-packed, urban areas.

[8] *Ibid.*, pages 133–136.

[9] See *Statistical Abstract of the United States, 1901.* Washington, D. C.: U. S. Government Printing Office, 1901.

[10] Schlesinger, *op. cit.*, pages 149–152.

Trend Toward Bigness

Throughout industry today, the drift toward the merging of smaller into larger units, with reduced competition and increased concentration of control, continues largely unchecked. Organization on a national scale by great, impersonal corporations has become the distinguishing feature of the commercial world. The benefits claimed for large-scale operation include improved processes and reduced production costs through use of more specialized machinery, more effective management methods, larger volume purchases, reduced unit costs of sales, and a stronger management to resist worker demands. By absorption and merger, great "coal barons," "steel kings," "railway empire builders," and "financial tycoons" have emerged as new millionaires, drawing their profits from the sale of corporate stocks, as well as from actual income from operations. Cornelius Vanderbilt, Jay Gould, James J. Hill, and E. H. Harriman in railroading; John D. Rockefeller in oil; Andrew Carnegie and Charles M. Schwab in steel; P. D. Armour and G. F. Swift in meat packing; and Jay Cooke and J. P. Morgan in finance; and hundreds more are great captains of industry who, while laying the foundations for a new America, have accumulated great personal fortunes.[11]

For two decades now a popular outcry against big business, with its tendencies toward monopoly and restraint of competition, has been growing throughout the land, particularly in the West and the South. The Sherman Antitrust Law of 1890 has been little heeded by the government and by the courts to date. Indeed, during the 90's, more industrial combinations have occurred than in the entire preceding period. Even now there are whispers in Wall Street of superconsolidations impending, such as the formation of a new billion-dollar corporation in the vital steel industry.

Growth of Organized Labor

A fivefold increase in number of wage earners since 1860, amid conditions of rapid growth and change in industry, has led to a notable growth in the scope and power of organized labor. Employer carelessness and neglect, wage and hour disputes, and cheap-labor exploitation of women, children, and immigrants have all added fuel to the labor movement. The American Federation of Labor, which followed the ill-fated Knights of Labor organization, has grown from a mere 150,000 in 1886 to over 550,000 as of the close of 1900. In contrast to the Knights, who set up one big union for all workers before losing their strength in a series of ill-timed strikes, this newer union serves as a spearhead for a minority group of skilled craftsmen. Ninety per cent of our labor force is either excluded or omitted from membership in the Federation. Despite an occasional ordeal by battle, both employers and employees have grown somewhat accustomed to bargaining methods during the past 20 years, and there has emerged the practice of settling differences through joint conferences with resulting trade agreements.[12]

Cultural Advances

The growing concentration of wealth and population in American cities after the Civil War has made possible finer schools, libraries, and cultural facilities than a more predominantly rural society was able to afford. The best schools, churches, newspapers, libraries, art galleries, museums, theatres, and opera houses are quite understandably located near large centers of population.

A tremendous advance in public education has been made during postwar decades, particularly in the North. Nearly 3,000 public schools have established kindergartens since St. Louis started this innovation in 1873. As a result of compulsory schooling in urban areas, free, public high schools have multiplied from about 500 in 1870 to 6,000 now at the turn of the century. Enrollment in the school system has risen from seven million in 1870 to over 15 million at the present time. Yet the legacy of the past can but slowly be overcome. In 1870 the average person received only 3⅓ years of schooling. The new 1900 average, held down by immigrants and older adults, is but little more than five years. Fully 10 per cent of our population, ten years of age or older, is still illiterate.[13]

[11] *Ibid.*, pages 192–194. [12] *Ibid.*, pages 202–211.
[13] *Ibid.*, pages 237–239.

Use of Leisure Time

The growing success of unions in establishing a 10-, and even a 9-, hour day makes it all the more imperative that our 29 million wage-earners face the problem of making constructive use of their leisure time. No less than 500 different fraternal organizations have been established since 1880, with over six million names in this "nation of joiners" now appearing on their rosters. Vaudeville has become a rival to the melodrama and the minstrel show in the public entertainment world. During the past decade it has accounted for the patronage of fully half of our theatregoers. Musical tunes thus popularized have swiftly swept the country through the medium of records played on Edison's improved talking machine or phonograph.

Population Growth and Immigration

Although our continental U.S. population has increased from 31,443,321 in 1860 to 76,303,387 in 1900 (84,907,156 including island territories), fully one-third of this 45 million increase cannot be accounted for by a simple compilation of births and deaths. The magnitude of the mass immigration thus measured from the time of the Civil War to date is awesome. The few restrictions imposed to exclude "lunatics, convicted criminals, and persons who might become public charges" seem unlikely to halt the tide of immigration as we enter the 20th century. New York City is regarded as the world's chief center for immigrants, having "half as many Italians as Naples, as many Germans as Hamburg, twice as many Irishmen as Dublin, and two and a half times as many Jews as Warsaw." Yet, despite the increased competition for jobs near immigration centers during recent depression days, the "melting pot" action in this great democratic country is having its beneficial effects in rapidly absorbing new immigrants from Eastern Europe and Asia, as well as earlier immigrants from the western countries of Europe.[14]

Foreign Trade and Policy

While continuing to import "citizens" at a phenomenal rate, the United States has succeeded in creating much more of a "2-way street" in the conduct of its expanding foreign trade. Secretary of the Treasury Lyman J. Gage reports that, while the American population itself has increased an impressive 100 per cent from 1870 to 1900, pig-iron production is up fully 600 per cent, the output of steel has risen over 1200 per cent, and exports of all goods have increased on the average more than 200 per cent. In the same period, American foreign investments have risen from an insignificant amount to over $.5 billion, much of which is invested in Latin-American countries. The American businessman and the American Navy are joining the American missionary in the Pacific Islands and in the Orient and are appearing more and more often in South American and European ports as well. Africa has now been carved up by Great Britain, France, and Germany, with Italy and Belgium slicing off relatively minor portions. The United States has fended off these rival powers in Latin America, where trade rather than territory is the goal. Within the last three years, the rich Hawaiian and Philippine Islands have become American possessions, and the United States has become protector of the peoples of Cuba and Puerto Rico as well.[15]

Naturally, these increased responsibilities overseas call for an enlarged Navy, and we may state with pride that, under Assistant Secretary of the Navy Theodore Roosevelt's program, our Navy has advanced from twelfth to fifth and, since the Spanish-American War, to third place among the world's fleets. It has been thoroughly modernized by conversion from wood to steel. President McKinley's reelection this fall, with Roosevelt as vice-president, after a thorough airing of the "imperialism" issue with Democratic candidate William Jennings Bryan, is regarded widely as ample proof that our overseas power is viewed by voters as a "happy fulfillment of American destiny." It is to be hoped that the long contemplated Panama Canal will now be built to shorten trade routes and to link for naval defense our outlying possessions in the two hemispheres.[16]

The New Nationalism

Not all of our learned academic men think well of these recent trends in American and

[14] *Ibid.*, pages 278-283. [15] *Ibid.*, page 283. [16] *Ibid.*, page 284.

world events. In this month's *Atlantic Monthly,*[17] two noted social scientists, historian Brook Adams and political scientist Woodrow Wilson, actually view our situation with alarm. Adams points out [18] that, whereas in 1860 our railroad system lay in embryo and our exports were one-fifteenth those of Great Britain, today our railroad mileage is ten times that of Britain and exceeds the total trackage of all of Europe as well. Moreover, America threatens to extend her communication lines across the sea to her rivals' ports, the better to "deluge" them with her wares and "suffocate" them with her surplus. If Europe cannot expand, Adams expects consolidation in an attempt to compensate for inferior resources. If all else fails, he believes that Europe will resort to war, as have all other "sinking communities" in the past. Adams concludes that the economic situation logically points toward a collision.

Wilson states [19] that we "stand in the presence of novel enterprises at the threshold of an unlooked-for future." Empire is, he believes, an affair of strong government, and the impulse of expansion is the natural impulse which comes from a consciousness of matured strength. In our case, he considers it the direct result of a new national spirit that was awakened by the war between the states and by the processes of Reconstruction. It is his judgment that "the Civil War discovered the foundations of our government to be in fact unwritten, and laid bare the ultimate foundation of our Union: physical force, sustained by the stern love and rooted predilections of masses of men." The sentiment of union and nationality, never before aroused to full consciousness, has become:

> a new thing, aggressive and aware of a sort of conquest. . . . The very growth of the nation . . . the uninterrupted habit of united action, the mere mixture and movement and distribution of populations . . . the mere consolidation of interests have been building and strengthening new tissue of nationality the years through, and drawing links stronger than links of steel round about the invisible body of common thought and purpose which is the substance of nations. . . . A new age gives it a new significance.

Where We Stand

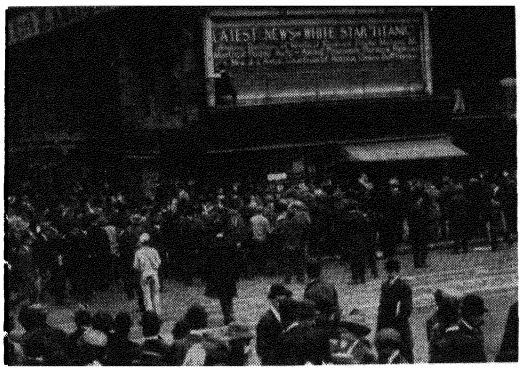
It has now been more than three full decades since the end of the "Great Conflict." These years have counted for more than any other such period in our history, so great have been the speed and range of our development, so comprehensive and irresistible has been the sweep of change among us. We stand at the threshold of both a new century and a new era. There appears to be no fixed limit to the advancement of mankind, save that of man's own making. As we face the future together, we should here highly resolve to build wisely and build well.

[17] *Atlantic Monthly,* Volume 87, Number 119, January, 1901.
[18] *Ibid.,* "The New Industrial Revolution" by Brook Adams, page 157.
[19] *Ibid.,* "The Reconstruction of the Southern States" by Woodrow Wilson, page 1.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1a	4	Why do you believe that electrical apparatus showed such a spectacular 22-fold increase on a percentage basis from 1880 to 1900?
1b	4	What might explain the falling off in number of sewing machines produced per capita from 1880 to 1900?
1c	4	Does a 2 per cent falling off in farm implements produced per capita from 1880 to 1900 imply that farm production per capita should soon decrease and that mechanization of farming methods should cease to spread?
2	4–5	How do you account for the magnitude of the growth of American industry between the Civil War and 1900?
3	5	What was the role of mineral development in the economic revolution in the United States?
4	5–6	How do you account for the magnitude of the growth of American agriculture between the Civil War and 1900?
5	6–7	What are the implications for future industrial activity of the tremendous growth of our American railroad network from 1860 to 1900?
6	7	Of what importance was the rapid development of the telegraph, cable, telephone, and postal communication systems to the expansion of business activity from 1860 to 1900?
7	7	In what ways do modern cities in 1900 differ from towns and villages of 1800?
8	8	Have the advantages of large-scale operation, which have led to the development of "big-business," proved beneficial to the typical citizen of 1900?
9	4–10	What conditions aided the growth of organized labor from 1860 to 1900?
10	4–10	Would you expect the use made of magazines, libraries, art galleries, theatres, and opera houses following 1900 to increase at a greater or lesser rate per capita than the average years of schooling of the population, ten years of age or older?
11	4–10	What effects would you expect our policy of encouraging mass immigration to have upon the American labor market in the years following 1900?
12	4–10	What effects would you expect our policy of encouraging foreign trade and American investments abroad to have on our domestic economy in the years following 1900?
13	9–10	Why should Wilson warn in 1900 that American territorial expansion and American nationalism are forces making for increases in the power of government within our society?
14	4–10	Summarize the extent of growth of the American economy from 1860 to 1900 in a half-dozen of its more significant avenues of development.
15	4–10	To what extent do you believe that we can predict "the shape of things to come" in political, economic, and social life?

2
A Mid-Stream Report: 1926



RADIO STATION "KMID" FAIRLY burst through the squealing ether waves that frosty New Year's Day of 1926 as the three John Smiths—John, Sr., John, Jr., and young John, 3rd—huddled around the workbench in the newly converted garage listening to an even newer, home-constructed crystal set. They were thankful indeed that the three pairs of earphones completely covered their respective ears, as the portable oil burner had not yet had time to remove the chill from the damp air in the former stable. "It's time for the special broadcast," said John, Sr. "Scratch the crystal around a little. See if we can improve the reception for the program."

At the stroke of two, pioneer radio station "KMID," the voice of Midvale Junction, completed its testing signals. It then commenced an eagerly awaited New Year's Day 1926 "Radio Report to the Nation." The three Johns listened intently, and heard:

Station KMID presents . . .

The Radio Report to the Nation

Set owners, have you tried Blue-Hue Specials? The only cigar in its price range to yield the famous "Smoky Mountain atmosphere." Try Blue-Hues today. Only 5c per . . . and you'll really purr as you draw on a Blue-Hue. It's the economical, slow-burner type. As distinctive as your favorite pipe.

And now, [squee . . . awk . k . k . . .] folks, this is our long-awaited report on the great events of the first quarter of the 20th century. This program has been 25 years in the making. Here is your favorite commentator, Bob Beale.

Thank you, Cal Young, and good afternoon to you, ladies and gentlemen.

To narrate the history of the past quarter century is to tell of the development and fortunes of human associations. Human lives give history dramatic interest. As history involves an analysis of the causes that determine the general flow of human affairs, individual commentators must use their interpretation of the past to help forecast the general trend of future events. Your narrator today, with this slight apology, will therefore proceed to present his own particular interpretation of the trend of past and future events.

Theme of Change in History

First, I shall take my main theme from that eminent historian, H. G. Wells. Mr. Wells, in forecasting the world's affairs, has labeled the situation today "a complicated conflict of very powerful social and political traditions, on the one hand, against a spreading tide of new

The photo at the top of the page shows crowds awaiting flash news of the "Titanic." On her maiden voyage in 1912 the White Star liner struck an iceberg and sank with a loss of over 1,500 lives. (*Brown Brothers*)

knowledge and an unprecedented onrush of new inventions that are entirely incompatible with these social and political traditions that still dominate men's minds." [1] We in the United States are a part of that world scene to which Mr. Wells refers. Our own national traditions are not, however, in dire conflict with new knowledge and new inventions. On the contrary, we welcome them and thrive upon them. We must remember, nevertheless, that the basic cleavages with which the world is faced will inevitably affect us at the national level as well.

Returning to H. G. Wells, we find that:

> . . . the forces of change express themselves now in a various multitude of devices and expedients, telegraphy and telephony, cheap paper, more rapid and efficient printing; in the wide diffusion of elementary knowledge and in the steady increase of the security, swiftness and quantitative capacity of transport by land and sea and air, and also in an enormously increased range of military destructiveness; they give us not only air travel but air weapons which abolish frontiers and war fronts and so bring in every living citizen as a combatant. . . . We may reap all the evil possibilities in the new forces before we come to the good. We may never come to the good. We may prove inadequate to realize the good.[2]

Ladies and gentlemen, both the 19th century and the quarter century just closed were, before everything else, eras of nationalism. Nationalism became an overpowering sentiment in men's minds. The World War arose out of nationalism, was precipitated through it, and left nationalistic tendencies apparently more potent than ever. A kaleidoscope of new nations has replaced the German, Austrian, Russian, and Turkish Empires. This revival of nationalism has occurred in the face of a fresh gathering of material forces, inventions, and methods, which seem to demand a new world rearrangement far beyond the scale of nationalist limitations.

Before focusing upon the United States, I must leave with you H. G. Wells' basic proposition that:

> . . . our estimate of the forces that are now making the form of history in the coming years must depend very largely upon our estimate of the power of nationalism. We have seen how the printing press helped it and how, to begin with, so far as Europe is concerned, even the ocean-going sailing ship helped it to consolidate mankind into independent and hostile communities. Are we assuming too hastily that the new inventions that have abolished distance and seem likely to abolish frontiers will really do so? Or will nationalism be strong enough to reject their invitation to unity and progress, to hinder and arrest and reverse this development so far as it makes for unity, and to restore and maintain the ages-long rhythm of war, conquest, expansion and fragmentation, as the permanent condition of human life? Manifestly a long struggle between these two forces lies ahead of us and will determine the history of the next century. Which group of forces will be the ascendant one, a hundred years from now? [3]

Industry and Invention

Theodore Roosevelt's accession to the presidency in 1901 coincided with the dawn of a new age in American economic life, as well as in political life and in international affairs. For 25 years we have had an enormous material expansion in this country. We have all participated in this expansion, and, through it, we have succeeded in making ourselves the richest nation on earth. The results of this material expansion have been spectacular indeed. The census of 1900 showed us to have a national wealth in the neighborhood of $90 billion, but the national wealth in 1925 (measured in 1925 dollars) reached the enormous figure of $350 billion. The per capita share of each American in the national wealth, it may be noted, had tripled once before in the half century from 1850 to 1900. It has almost tripled again in the quarter century from 1900 to 1925, rising from $1,165 per capita to a current figure of $3,000 for every man, woman, and child. Wholesale prices, which almost tripled from 1900 to 1920, largely as the result of the war, have now fallen to a point just three-fourths above the level that prevailed in 1900. Thus, even in terms of 1900 dollars, the average citizen is half again as wealthy as he was in 1900—and the end to this process of enrichment is not even remotely in sight.

These per capita material gains since 1900 were achieved despite the population increase of more than 50 per cent from 76 million to 115 million during this quarter century. Even now 15 million citizens a decade are being

[1] *These Eventful Years*, Vol. II, p. 1, edited by The Encyclopedia Britannica Co., Ltd., 1924.
[2] *Ibid.*, p. 3. [3] *Ibid.*, p. 5.

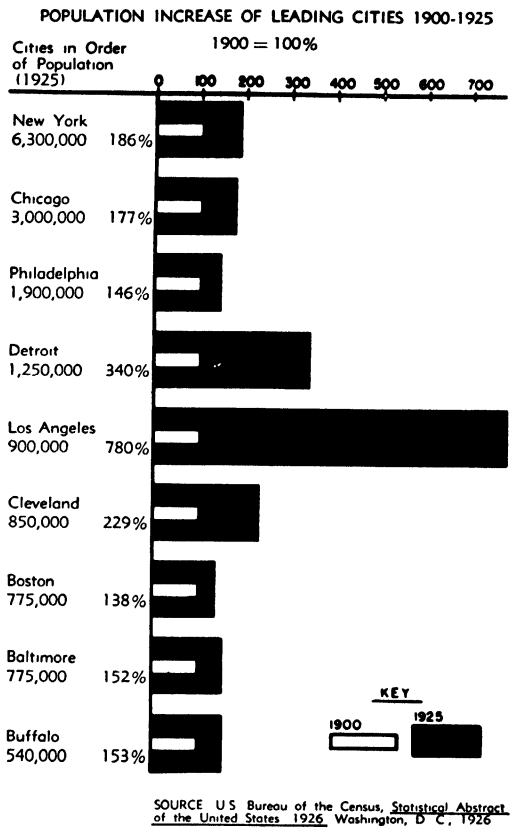
added to our population base. Although in earlier periods, one-third to one-half of the net increase in population was attributable to immigration, in the future, under quotas set by the Immigration Act of 1924, new arrivals from foreign countries are expected to account for only a small fraction of our population gain.

As our wealth increases, the American way of life is changing significantly. The number of dwellers in towns and cities has more than doubled during the short span of 25 years from 1900 to date, a growth rate fully twice that of the population as a whole. In 1900, two Americans out of five were urban residents. Today there are six city dwellers for every five rural inhabitants. The most spectacular growth has been recorded among cities in the Far West and the Mid-West. [See Figure 2–2 for a graphic portrayal of the growth of American cities.]

During the 25 years since 1900, the factory system has intensified its command of the manufacturing field. In 1925, physical output available on a per capita share basis was thus nearly six times that of 1850, a startling increase in well-being by any standards. [See Figure 2–3 for graphic presentation of critical data.]

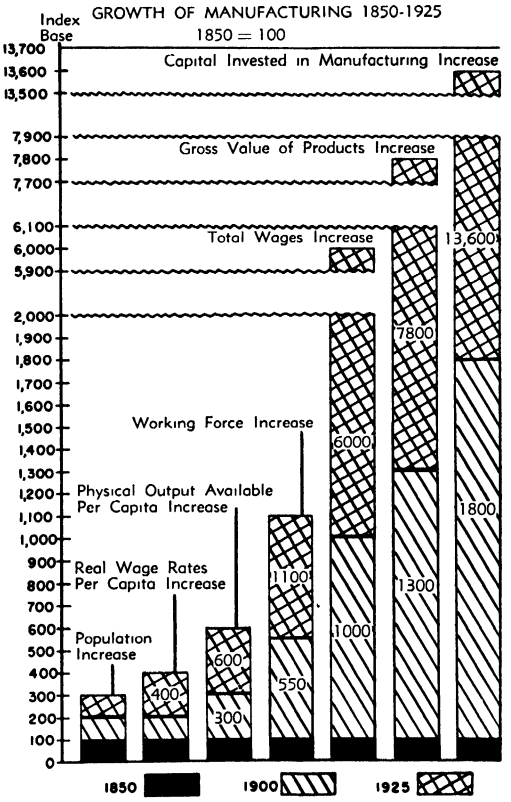
American industry in 1925 mustered 187,000 separate establishments with products valued at $5,000 or more a year. These units employed a total of 8.3 million wage-earners and turned out a total product valued at $62.7 billion. Fifteen leading industries each turned out products valued in total at one billion dollars or more. [See Figure 2–4.]

Fifteen other industries in the $.5 billion to $1 billion class are listed as follows in descending order of value of product: butter, cheese, and canned milk; paper and wood pulp; boots and shoes, rubber tires and tubes; tobacco; furniture; knit goods; silk manufactures; copper smelting and refining; food preparations,



SOURCE U S Bureau of the Census, Statistical Abstract of the United States 1926 Washington, D C, 1926

Figure 2–2



SOURCE U S Bureau of the Census, Statistical Abstract of the United States 1926 Washington, D C, 1926

Figure 2–3

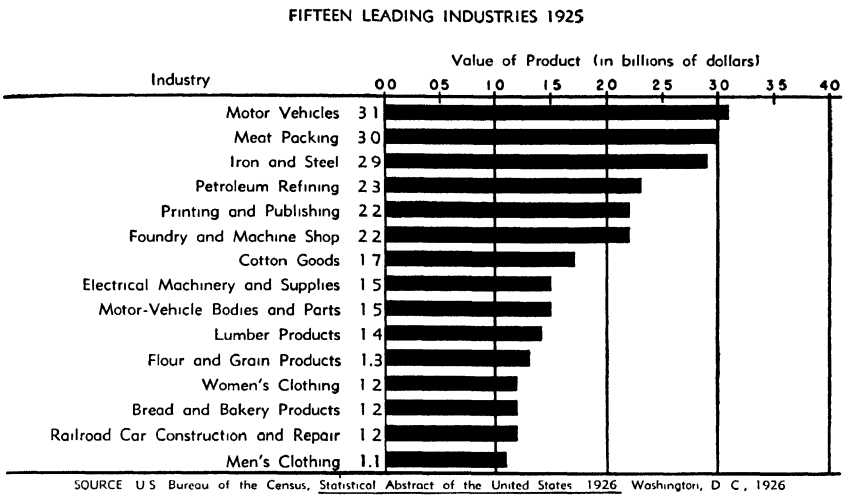


Figure 2–4

canning and preserving; sugar refining; worsted goods; chemicals; and nonferrous alloys.

A striking illustration of the key role played by machines and power in the "economic revolution" prior to 1900 and in the transformation of manufacturing from 1900 to 1925 is afforded by figures for the annual supply of energy from mineral fuels and water power in the United States. [See Figure 2–5, for graphic presentation.] Seven-and-a-half tons of coal or its equivalent are now consumed per capita to supply energy needs. In 1870, that figure was approximately 1⅛ tons.

From 1850 to 1900, coal was the ruler of the energy field, supplying well over 90 per cent of the country's ever-expanding needs. During the war decade, this picture began to change rapidly, and coal use dropped somewhat to a figure equaling 82 per cent of our total energy needs. In postwar years, this trend has continued. Coal in 1925 was selected for only 67.5 per cent of our total energy needs. The use of fuel oil has increased sixtyfold since the 1870's, to account for 20.5 per cent of our current need. Natural gas and water power have also invaded the field, since their development as commercial sources of energy in the 1880's. They now contribute 6 per cent each to our total energy needs. Oil, natural gas, and water power in the form of electricity are still rising sharply in both supply and demand with every succeeding year, but coal consumption has recently fallen off on an absolute as well

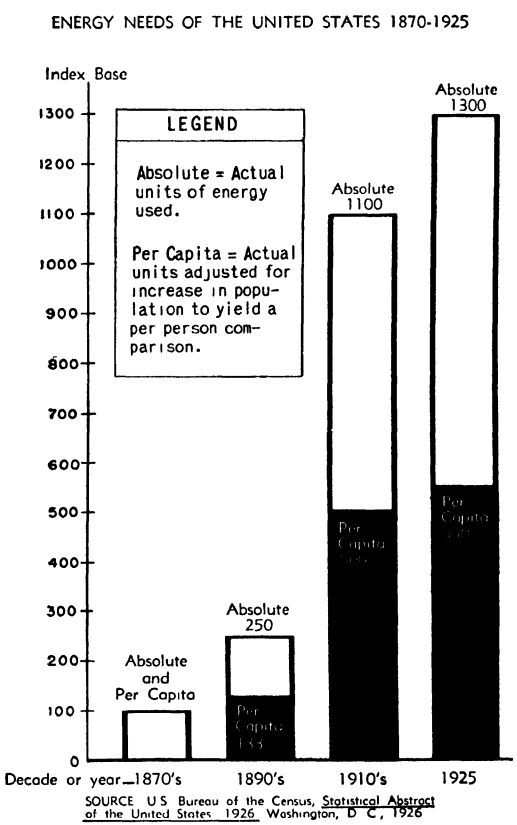


Figure 2–5

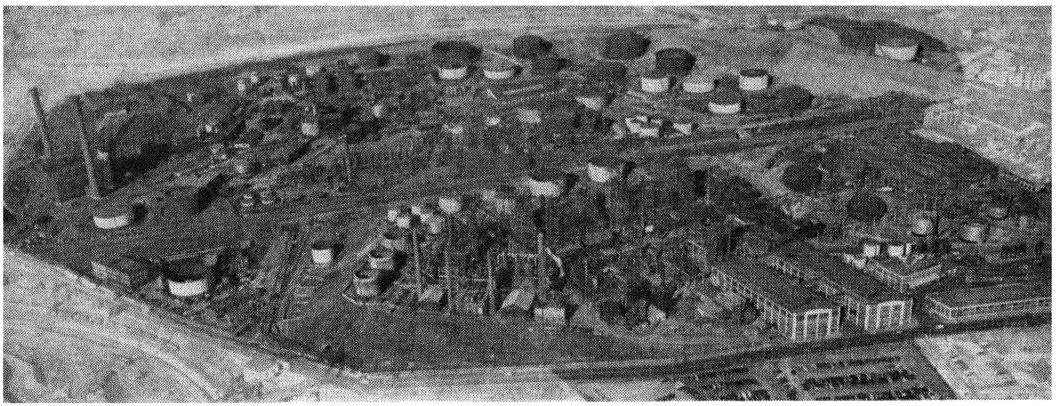


Figure 2-6: The original plant of the Standard Oil Company of Ohio in 1870 occupied part of a small hill (near top left of photo) in Cleveland. The modern Sohio plant has spread out in all directions from the original site. (*Standard Oil Company of Ohio*)

as a relative basis. The industry has been described by economists as both "mature" and "sick."

A somewhat similar, and not unrelated, situation may be observed in the broad field of transportation. The American railroad network was largely completed by 1916, when miles of road in operation reached an all-time peak of 254,037, 31 per cent above the 1900 figure. After this date, abandonments outstripped new construction by slight amounts each year. Miles of total track (in contrast to miles of roadbed), on the other hand, have edged upward year after year. Other key indicators show clearly, however, that the United States railroad system has reached a new stage of maturity. The total number of railroad employees has receded 14 per cent since reaching a peak of more than two million in 1920. The number of tons of freight traffic handled by railroads has remained relatively constant since 1920. During the recession year 1921, railroad tonnage handled actually dropped below the 1910 figure, and was only two-thirds greater than that of 1900. Railroad passenger traffic also reached a peak in 1920. The competition of the automobile has reduced railroad passenger traffic by one-fourth in five short years, and the trend continues downward without pause. [See Figure 2-7.]

Annual production of automobiles and trucks in 1925 climbed to a figure of 4.4 million vehicles a year, a production volume 1,100 times that of 1900. The total number of passenger car registrations this year is 17.5 million, and the total number of truck licenses held is 2.5 million. Both the annual production rate

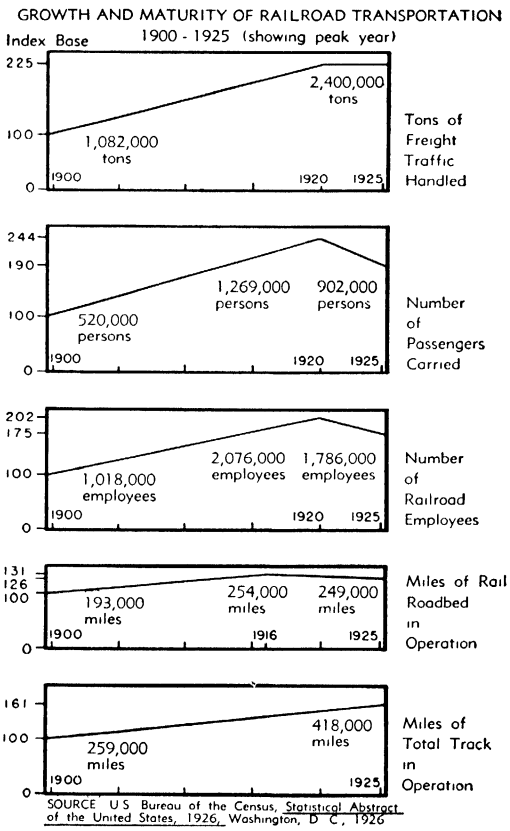


Figure 2-7

and the total number of vehicles registered have doubled since 1920. Thus, the automobile boom may be judged as still in an early stage and may be projected for years to come. As a by-product, auto fatalities, which were recorded in 1910 at the rate of 2.2 deaths per 100,000 population, have climbed steadily year by year. Today the death toll has reached the rate of 17.1 per 100,000 population. Our vast road construction program, which has more than tripled the network of surfaced roads since 1910, has apparently merely added to the impact with which motorists collide, both with each other and with stationary objects.

Despite shifts away from coal, rail, and farm, the American economy in 1926 is a vigorously expanding one. The booming automobile and electrical industries, which are largely responsible for the above trends, are forging ahead as noted earlier, and, in doing so, help to set the modern tone. In the communications field, also, sustained growth has been particularly prominent. Our postal service is now handling 3½ times the volume of mail that it delivered in 1900. Our vast telephone network today is 23 times as extensive as it was in 1900 and, in volume of calls, has increased eightfold. Five wireless telegraph companies now send three million messages annually, using a mode of communication that did not even exist commercially in 1900.

Another example of vigor in this same general field is the amazing radio boom, which has recently swept the country. Radio apparatus and tube manufacturers have increased their volume of output fully twentyfold during the past five years in developing a brand-new, $200 million industry to supply radios for American homes. As a price of progress, we must record that half of these radio sales represent a shift in consumer spending away from the long-established phonograph industry whose sales have dropped off 62 per cent, from $158 million in 1919 to $61 million in 1925, after increasing fully fivefold from 1914 to 1919.

Further proof that the pace of American progress is not slackening is shown by statistics for patents granted by the U. S. Patent Office. More patents were issued by the government in the single year 1925 than in a) the entire period from the founding of the republic through 1860, b) any five-year period from 1861 to 1875, c) any two years from 1876 to 1900, or d) any previous year from 1901 to 1924. The 1925 figure of 46,450 patents granted is almost double the comparable total for the year 1900.

[Increases in selected economic data categories between 1900 and 1925 are charted in Figure 2–8.]

Big Business and Muckrakers

After the Spanish-American War, a rash of combinations and consolidations in the business world placed "Big Business Trusts" and "Monopolists" squarely in the spotlight of un-

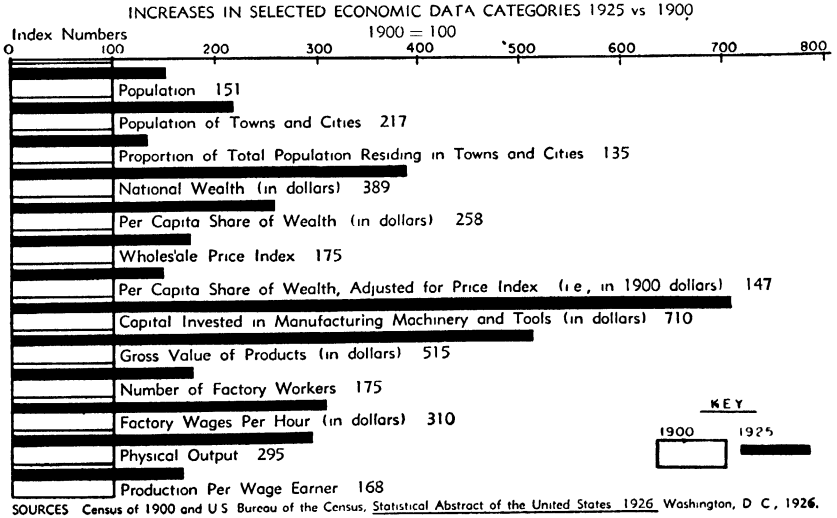


Figure 2–8

favorable public opinion. The year 1899 saw the formation of 92 major combinations, including the giant Standard Oil Company and the Amalgamated Copper Company, and 1901 brought the billion-dollar United States Steel Corporation. Amalgamated controlled 60 per cent of all the copper produced in this country, and U. S. Steel controlled about 70 per cent of our iron and steel production.[4] The telephone, telegraph, and express businesses also gravitated into the control of one or a few large corporations. The Pujo committee in the House of Representatives asserted in 1913 that a "money trust," led by Morgan and Rockefeller financiers, had amassed vast and growing business empires through stockholdings and interlocking directorates. This, they said, placed undue control of money, credit, and industrial power in the hands of a few men.

A group of young journalists, who regarded these recent trends in business ownership and control as "evil," undertook a campaign to expose the shortcomings of business and politics through sensational writings. They soon acquired the designation of "Muckrakers" when President Roosevelt likened them to the "Man with the Muckrake" in *Pilgrim's Progress*, whose absorption in the filth on the floor caused him to refuse a celestial crown.[5] Ida M. Tarbell's *History of the Standard Oil Company* (1902), Thomas W. Lawson's *Frenzied Finance* (1904), Upton Sinclair's *The Jungle* (1905), and Lincoln Steffens' *The Shame of the Cities* (1905) represent significant literary products of the Muckraking movement. Their efforts led to a moral awakening of our citizens in support of political, social, and industrial reforms.

Political Reform and Progressive Movement

In the political arena, this wave of reform brought into power young men, such as Robert M. La Follette of Wisconsin, Charles E. Hughes of New York, and Hiram Johnson of California, who fought "party bosses" and "special interests" at both state and national levels. They split both major parties into so-called conservative and progressive elements. Soon this Progressive Movement found expression in social legislation designed to improve the living conditions of the average American. Laws affecting child labor, women in industry, safety in industry, hours of work on public projects, workmen's compensation, regulation of railways and utilities, taxation of income, and women's suffrage resulted from the progressive movement. It substituted the positive doctrine of social responsibility for the older doctrine of "laissez-faire," which had guided most governmental bodies.

President Theodore Roosevelt won widespread approval for his "square deal" reform program. It recognized the advantages of large-scale enterprise, but called for broader government regulation of railways and utilities and for conservation of natural resources. The President's striking personality, his use of the "big stick" while "speaking softly" in foreign affairs, his energetic pushing of the Canal Zone project, and his "trust-busting" activities led to a close identification in the public mind of "Progressivism" and "Rooseveltism" at the national level.

Roosevelt's chosen successor in the White House, William Howard Taft of Ohio, was less than enthusiastic about Progressive Movement activities. This turn of events led ex-President Roosevelt to oppose President Taft for reelection in 1912. Roosevelt's "Bull Moose" movement split the Republican party so badly that Democrat Woodrow Wilson was brought into power with but 41.8 per cent of the votes cast in the three-way election.

Wilson's "New Freedom"

President Wilson, as a distinguished professor of political science and as governor of New Jersey, had acquired a commanding grasp of the details of political organization and of the game of politics. He was quick to interpret for himself the popular will and to use the weapon of ruthless publicity as a means of coercion. The first Wilson Congress in 1913–14 passed the Underwood Tariff Act as a downward revision of the earlier Payne-Aldrich Tariff with a view to encouraging foreign trade. Also, through the Federal Reserve Act of 1913, the national financial system, developed long ago under the National Banking Act of 1863, was radically revised. This act decentralized credits,

[4] Arthur Meier Schlesinger, *Political and Social Growth of the United States, 1852–1933*, page 316. New York: The Macmillan Company, 1935.

[5] *Ibid.*, page 317.

made the currency more elastic, and diminished the danger of financial panics. Other key measures passed by this Congress were the Federal Trade Commission Act and the Clayton Anti-Trust Act of 1914.

The World War

When war broke out in Europe in August, 1914, President Wilson issued a proclamation of neutrality in keeping with traditional American policy. As the conflict grew more fierce, however, the vital interests of the United States became involved to a far greater extent than our leaders had foreseen. German use of unrestricted submarine warfare played an important role in swinging U. S. public opinion solidly behind the Allies. While America was still neutral, President Wilson delivered a series of distinguished addresses on the essentials of a just and lasting peace. These views made him the recognized spokesman, as well as a great moral leader, for the liberal element in all countries.

In April 1917, popular indignation mounted in response to the sinking of American shipping and the interception of the "Zimmermann Note" from Germany inviting Mexico to participate in war on the United States. The way was cleared for a simple alignment of "democracies versus autocracies" by the Soviet Russian revolution in March of that year, which had overthrown the Tsar's government. In these circumstances, President Wilson asked for and signed a Congressional resolution declaring that a state of war existed between Germany and the United States.

The war had developed along unprecedented lines. Trench warfare involving millions of soldiers on both sides replaced open-field warfare. Numerous inventions and discoveries, developed in peacetime to advance human welfare, were now converted into instruments of human destruction. The motor car became a carrier for troops and material and, in the form of armored tanks, became itself a weapon of destruction. The airplane, which was quickly made proficient under press of war, rendered notable service to the ground armies in scouting, bombing, and strafing. It rose in its own right to oppose enemy air fleets in combat.

The entry of the United States on the side of the Allies brought a vast new source of manpower and almost unlimited quantities of munitions, supplies, ships, raw materials, foodstuffs, and money. Equally important, however, it brought to the weary Allies the fresh enthusiasm and heartening idealism of the Americans. This injection was most timely after three years of exhausting battle in which the Allies had met a series of noteworthy reverses.

War Economy

This vast world struggle wrought many changes in America itself. Under President Wilson's leadership, Congress adopted the Selective Service Act enabling the President to conscript a million men. The act conformed with the democratic principle "That there is a universal obligation to serve and that a public authority should choose those upon whom the obligation of military service shall rest, and also in a sense choose those who shall do the rest of the nation's work." [6] At the same time, measures were taken to mobilize the country's industrial and agricultural resources. Secretary of War Newton D. Baker pointed out that "wars are not made by soldiers only, but by nations . . . and . . . the army is merely the point of the sword." [7]

A Council of National Defense directed the nation's industrial, professional, and labor forces. Within this framework, the War Industries Board under Chairman Bernard M. Baruch procured supplies for America and her Allies, fixed prices, and determined priorities of manufacture and procurement. America's productive capacity increased more than 20 per cent during the war. Yet, at the war's end, the United States still relied largely upon French and British armament makers for heavy artillery, machine guns, and airplanes.

A second important committee of the Council of National Defense was that on Food Supply, headed by Herbert C. Hoover, famed organizer of Belgian relief who is today serving as Secretary of Commerce. This group greatly stimulated agricultural production and effectively curtailed domestic consumption. In 1918, America doubled the annual average amount of food exported to Europe. She not only fed the Allied armies, but also saved the European peoples from imminent starvation.

[6] *Ibid.*, page 410.
[7] *Ibid.*, page 411.

Other government war powers involved fuel, transportation, telephone and telegraph lines, cables, and the express business. Before the war's end, our democratic nation had temporarily moved far in the direction of state socialism. The people rallied to the cause in this World War as they had in no other conflict. Earlier disagreements, natural in a nation one-third of whose population were foreign-born or first-generation children, were soon drowned in a rising tide of patriotism. Practically the entire adult population responded to government financial appeals. Four great Liberty Loan Drives and a final Victory Loan Drive were oversubscribed. This financing made possible the spending of over $21 billion on the war in two years' time, a rate of over $1 million an hour.

Although successful in war and recognized as a world spokesman, President Wilson lost control of both houses of Congress in the armistice month of November, 1918. This political defeat at home had grave implications for the postwar policies, foreign and domestic, of the Wilson administration.

Postwar Politics and Policies

A great period of decision followed the armistice of November 11, 1918. The victorious Allies negotiated a peace treaty at Versailles in 1919. President Wilson sought vainly, first to gain his idealistic Fourteen Points, and later to get Senate ratification of the treaty, which he did obtain.

Wilson believed that his success in designing a covenant for the new League of Nations and in providing for creation of a Permanent Court of International Justice outweighed the concessions he made during the negotiations with old-line diplomats, such as France's "Tiger" Clemenceau. American Senators, not of Wilson's party and not sharing his idealistic bent, feared that ratification of the treaty, with its League features, would be an unwise departure from the old national policy of abstention from European entanglements. As President Wilson tried to "take his case to the people" in a strenuous speaking tour, he suffered a paralytic stroke, which confined him to his quarters for the duration of his presidency. Without the full aid of their leader, the pro-League forces failed to command the necessary two-thirds majority vote in the Senate. Wilson then called upon the American people to view the election of 1920 as a "great and solemn referendum" on the question of peace and the League of Nations.

In the presidential campaign of 1920, the Republican nomination was controlled by anti-League Senators who selected a "safe" compromise candidate. Senator Warren G. Harding of Ohio was nominated for president, with Governor Calvin Coolidge of Massachusetts named for vice-president. The latter's firm role in settling the Boston police strike had recently placed him in the national spotlight. The Democrats chose Governor James M. Cox of Ohio as presidential candidate and Franklin Delano Roosevelt, a distant cousin of the famous "Teddy," for his running mate. The Democratic platform supported Wilson's policies and called for immediate ratification of the peace treaty without material reservations. The Republicans knew they would gain from the world-wide reaction against the war governments. They laid all of the nation's troubles at the door of the party in power and kept the League question uncertain enough to attract all shades of doubtful voters. The result was a two-to-one Republican victory.

Unfortunately, President Harding was a victim of his own intimates, the so-called "Ohio Gang," in what became the Teapot Dome scandal and the Veterans' Bureau scandal. Harding suffered a stroke in August 1923, while returning from a trip to Alaska, and died in San Francisco. He was succeeded by our present chief executive, Calvin Coolidge, a capable man who is known for "saying much in little and often in silence." [8] President Coolidge's recent election in his own right over Democrat John W. Davis of New York and over Senator Robert M. La Follette and his Wisconsin Progressives was by such a large margin that the Republican "prosperity" party seems destined to enjoy a long period of political supremacy.

World Commerce and America

It has long been a popular belief that the opening of a new century magically ushers in a new era in man's affairs. The double ciphers on the calendar in 1900 cast their spell. They led numerous economists to state that the

[8] *Ibid.*, page 450.

world was crossing a threshold to great changes. Indeed, there was striking evidence of more complex international contacts, of new commercial and economic relationships, and of Western power and economic ambition rushing to dominate less settled parts of the world.

During the recent past, the new means of rapid communication and transportation have helped to eliminate one element of the extreme risk that formerly barred certain international economic contacts. The way was open for the small importer, exporter, dealer, trader, and investor to build up foreign trade in competition with giant corporations, which dominated the earlier picture. Partially in support of this greater part being played by Americans in foreign commerce, the U. S. Department of Commerce and Labor was established in 1903.

The total commerce of the world showed an amazing growth between 1900 and 1913, even when compared with an earlier record of increase at the rate of $3 billion dollars a decade from 1850 to 1900. The figure for 1900 was $20 billion. This figure climbed to the neighborhood of $50 billion by the outbreak of the World War. Even after allowing for a 50 per cent price rise during this period, it is plain that international trade was becoming far more important to the leading countries of the world in the 20th century than it had been in preceding years.

American foreign exports rose steadily during this period, doubling from 1880 to 1900, and doubling again from 1900 to 1915. The 1915 figure of $3 billion climbed spectacularly to reach an $8.5 billion peak in 1920 as a result of the war. Europe was subjected to a "Yankee invasion" of American manufactured goods. The World War distorted trade currents, monetary values, shipping conditions, industry, and statistical data. Only a broad view of the major commercial developments of this period can be valid. The United States enjoyed the advantages of a neutral as a source of supply for warring nations in the opening years of the war. She was in a position to take advantage of markets in Latin America and Asia as well. Europe continued to receive by far the greater part of this export trade, however, averaging 67 per cent for the period.

With imports, the statistical story has been entirely different. Europe's contribution dropped from a prewar 50 per cent of the total to a wartime figure of 14 per cent. On the other hand, the war demanded higher imports of raw materials from Latin America and the Far East to supply the sinews for the tremendous expansion of American industry. Total imports, which stood at less than $1 billion in 1900 and less than $2 billion in 1910, climbed rapidly during the war to reach a $5.75 billion peak in 1920. Both exports and imports have fallen sharply in recent years. Exports in 1925 totaled $5.3 billion as against imports of $4.4 billion, yielding close to $1 billion as a "favorable balance of trade." [9]

The war saw the final transformation of the United States from a debtor to a creditor nation in world trade. This shift occurred partly through the extension of vast credits to warring governments and the buying back of foreign-held American securities. It also came about through American investment of new capital in Latin America and the Far East. The increase in American shipping from one million to ten million gross tons from 1914 to 1920 created a vast merchant fleet. The existence of that fleet had a stimulating effect upon foreign trade.

The total physical volume of world trade, after allowing for price increases, is still below prewar levels. Analysis shows that this condition is largely a result of wartime destruction and distortion of the productive and consumptive channels in Europe. Recent advances in the communications and transportation fields augur well for an eventual advance in world trade. The laying of two great Pacific cables shortly before the war, the one between Canada and Australia and the other from the United States to the Philippines, have filled in the last long gaps in the world's communication service. New and valuable postwar links between the United States and Latin America allow quick transmission of commercial messages. International radio has made noticeable advances since 1921, and plans have been concluded for powerful American stations in South America, Asia, and Europe. These wireless stations will provide direct contact between the United States and competitive markets throughout the world. Commercial air services in Europe and the proposed development of similar lines in Asia, Africa, and the Americas

[9] *Statistical Abstract of the United States, 1926.* Washington, D. C.: U. S. Government Printing Office, 1926.

point to the eventual handling of passengers and freight by air, as well as by rail, motor, and water. The recent Post Office Department demonstration that a daily air service between San Francisco and New York on a 28-hour schedule is feasible allows hope that additional air services may be organized throughout the United States, supported in part, at least, by the postal traffic.

Industry and Research

Among the outstanding advances of our times must be noted the gradual change in attitude of industrial leaders toward both pure and applied research. The number of working laboratories has multiplied the world over. There has been a significant rise in the training and competence of the men and women employed in them. Cordial relations are being established between the industrial world and educational institutions. Sums are being provided by industry (sizeable in the absolute, but small compared to needs) to help our colleges and universities carry on basic and applied research.

The importance of new theories in industrial progress can scarcely be overstressed. Let us consider a few selected examples. A number of processes for the fixation of atmospheric nitrogen have been suggested and developed during the present century. In view of the importance of nitrates in agriculture as fertilizer, in industry as raw material, and in national defense as explosives, the achievements of applied science and engineering along these lines may rank high in the accomplishments of the 20th century.

The rapid advance in means of communication, which has characterized the present century, results from the combined efforts of physicists, chemists, other scientists, and engineers. They have developed devices to repeat wave lengths in long distance telephoning, to improve insulation in cables, and to employ electrons in vacuum tubes to control waves of energy brought in from storage batteries, to name but a few items.

In the area of artificial light, basic work upon the modern incandescent light increased the efficiency of the electric light more than four times. This improvement saved the United States $1.5 billion in its lighting bill for 1925, alone, over what the same service would have cost 30 years earlier.

The automatic machine tool, so typical of modern American industry in general, has been applied to new fields. It is now used, for example, in the production of glass tubing and bottles, heretofore turned out laboriously by highly skilled workmen. Today automatic machinery rolls out its miles of glass tubing at such low cost that incidental breakage around the plant is largely ignored. Practically all incandescent light bulbs and milk bottles, to name two household necessities, are now blown automatically by machine.

The applications of discoveries in glass-making and optics most appreciated at the present time are the motion-picture projector and its companion-piece, the motion-picture camera. These instruments have developed in exciting fashion since 1900. There have been refinements in all mechanical and optical devices connected with motion-pictures to such an extent that it is actually believed that one day films may well be turned out with sound-production and with color.

Secretary of Commerce Herbert Hoover has made the following statement concerning our present and our future:

> Industry and commerce have grown rapidly in recent years in their appreciation of the fundamental contribution of pure science of both chemistry and physics. The great increase in private research laboratories and the fine support of our public institutions are the mark of this realization. Discovery and invention are now no longer the function of the garret genius. They are the result of deliberate organized exploration by our men of pure science. New discoveries and their application will come faster and more securely than ever before; and I believe the next half-century will be greater in its triumphs of science and in their contribution to human welfare than even the last fifty years—for we are better trained, better organized, better equipped for discovery than ever before.[10]

Big Business

Charles M. Schwab, president of the United States Steel Corporation at its formation in

[10] Statement by Herbert Hoover in *Industrial and Engineering Chemistry*, September, 1923.

1901, recorded a conversation which he had at that time with J. P. Morgan, the financier. Mr. Morgan expressed fears that this country, with its steel producing capacity of 12 million tons a year, may have over-built. Andrew Carnegie had also shared this feeling in earlier years. Yet time showed that U. S. Steel alone had to produce nearly 25 million tons of steel in a single year during the war. Even then mill capacity was insufficient to meet demand. The steel industry has grown from one million tons in 1880 to 50 million tons today. Mr. Schwab confidently predicts that the day will come when 50 million tons "will be swollen to 100 million tons—and even then we shall be but at the beginning." [11]

Big business has long been charged with seeking an excessive return, with stamping out competition by ruthless methods, and with oppressing labor. These abuses of power have often occurred, but they are by no means as frequent now as earlier. They are not necessary accompaniments of bigness. The government has passed rigid laws in recent years to correct the worst abuses of "trusts." The typical "captain of industry" tends to regard his position more as a public trust than as a mere opportunity for private gain.

There is a distinct movement among managements all over the world toward giving the men who labor a more effective voice through representation in solving problems of mutual interest. As an example of management's thinking, we may cite the Bethlehem Steel Corporation, which is enabling and assisting its employees to buy preferred stock of the company, in order to create interest on the part of employees in its activities. Mr. Schwab has stated: "The people who labor are not and cannot be treated like dumb, driven cattle; they are human beings, with feelings and sentiments, hopes and aspirations, and the fundamental problem of all industry is so to relate the human elements in the men who do the work to the machines which they operate that the men themselves will be happy and healthy, and so that they shall thus be able to operate their machines with spirit and efficiency." [12] This is a movement for the perfection of human engineering under the leadership of business.

American Labor Movement

Retail prices rose rapidly during the Civil War period, but wages lagged far behind. As a result, trade-union activity was greatly stimulated. Local trade unions were organized in nearly every trade beginning in 1862. In 1863, the first central trades union, or local federation of unions of the period, was formed in Rochester, New York. During this period the 8-hour day was a major concern of the trade unions.

Before the practical economic philosophy of trade unionism became predominant in the American labor movement, the workers took one last fling at a reformist type of unionism. In 1869, they established the Noble Order of the Knights of Labor, which hoped to achieve labor unity by organization, education, and social reforms. This union disintegrated in a series of disastrous strikes from 1886 to 1890.

At the same time, a "new unionism" was developing in the United States, which borrowed heavily from the British labor movement model. This approach stressed centralization of authority in international officers, increased dues, an extensive system of benefits, and "equalization of funds" to bolster weak locals. Shortly after its permanent establishment on a national scale in 1886 as the American Federation of Labor, this new movement became the predominant organization of workers.

The World War brought years of unusual significance for the American labor movement. Trade-union membership almost doubled in the 5-year period 1915–20. Significant labor legislation was enacted, and organized labor was represented on important war agencies. The radical wing of the labor movement suffered major setbacks. There was a vigorous effort to organize mass-production fields little penetrated by unionization.

In the first half of the 1920's, however, a number of causes have operated to bring about a sharp decline from the 1920 peak figure of five million members for American organized labor. The postwar depression affected both individual workers and the labor movement as such. Anti-unionism, "Red-baiting," the emergence of the Ku-Klux Klan, and the collapse of political liberalism in recent years are mani-

[11] Charles M. Schwab, "Some Reflections on Big Business." *These Eventful Years,* Vol. II, page 554. [See footnote 1.]

[12] *Ibid.,* page 556.

festations of the swing to the right. Up to the present decade, trade-union growth normally has accompanied industrial prosperity. In the present decade to date, lower prices during boom years have brought a significant rise in real wages for American industrial workers. This absence of a wage lag has nullified what is normally an important stimulus to organization in good times. Internal conditions within the unions themselves have led to further declines.

Education for Democracy [13]

The first quarter of the 20th century has been fertile beyond all expectations in the advancement of education generally, and particularly in the growth of the democratic tendency. The war interrupted certain phases of the educational systems of some belligerents, but, far more significant, it stimulated a keener appreciation of the importance of education to the national welfare. It led many countries to make sweeping changes in the goals of their educational programs.

In an era when absolutism has been in rapid decline through conflict with the great democracies, education is bound to reflect those same democratic tendencies dominant in political life. In the United States, the two outstanding developments in education have been the unparalleled growth of the public high schools and the vast increase in enrollment at universities and colleges. In 1900 there were less than 700,000 high school students. In 1925, this figure topped 3,600,000. Moreover, civic pride in the educational system has generally kept pace with the physical needs for school buildings and equipment. Millions of dollars have been spent for our modern educational plant. In many cases, new schools have become centers for civic interest in related subjects such as music, art, and adult education.

The desire to make education relevant for all types of students has led to the founding of new commercial and technical high schools and to the introduction of shops and vocational studies in regular schools. The Federal government has stimulated this vocational movement by appropriating money for shops and laboratories on condition that the States match the Federal contributions. This broadening of the educational program has given our democratic system of free education through the high school grades increased significance for all segments of our population.

At the college level, it is more difficult to identify promising new ideas, which may have accompanied what appears on the surface to be pure growth. From a 1900 figure of 237,000 students and 22,000 staff in institutions of higher learning, the nation's colleges, universities, and professional schools have grown in enrollment to 850,000 and in staff to 60,000, increases of better than 250 per cent.[14]

Prosperity and Peace

America appears headed into a new era of peace and plenty. Under the Republican regime of Harding and Coolidge, we have cut down government activity and encouraged private business to shoulder its full share in the great task of bringing prosperity to the people of this land. As our President has so often stated, "The business of America is business," and it has been possible for a business-like government both to reduce taxes and reduce the national debt by the simple expedient of cutting down its own expenditures by more than the loss of tax revenues. The nation's rapid recovery from the depression of 1920–21 and the present boom conditions in business and industry demonstrate the apparent success of the administration's policy.

In foreign affairs, the government has forged a program of "cooperation without entangling alliances" in harmony with guiding principles set forth by President Harding in his 1921 inaugural address, as follows:

> We seek no part in directing the destinies of the world. . . . We are ready to associate ourselves with the nations of the world, great and small, for conference and counsel, for the suggestion of plans of mediation, conciliation, and arbitration; but every commitment must be in the exercise of our national sovereignty.[15]

The United States does send official observers to take part in League of Nations con-

[13] James R. Angell, "Democratic Tendencies in Education." *These Eventful Years,* Vol. II, pages 531–542. [See footnote 1.]

[14] *Ibid.*, pages 601–605. [15] Schlesinger, *op. cit.*, page 454.

ferences when our national interest warrants, but we have not become an active member of the 54-nation League. Through the Washington Conference of 1921, the American government has played a key role in watching over the Pacific. With the 5:5:3 formula for the U.S., Britain, and Japan reducing the world's navies, the great powers have taken a second step toward permanent peace by pledging to respect each other's possessions. These protective moves, coupled with the sheer expanse of the broad oceans that protect us on both shores, would seem to guarantee that we can long continue to enjoy domestic well-being in a world untroubled by major wars.

"Well, I only hope he is right," commented Grandfather Smith dryly, as the afternoon radio cavalcade ground to a halt. "Things look too good to be true."

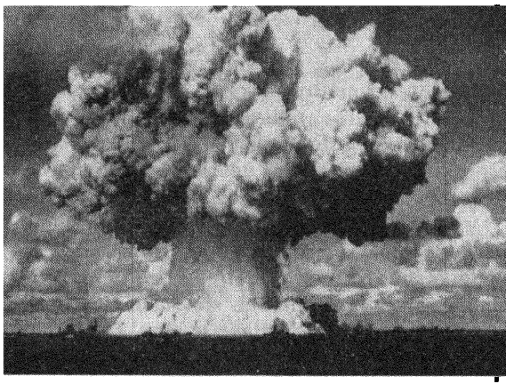
"Now don't be a pessimist, Dad," chided John, Jr. "Just because we've had wars and depressions in the past is no sign that we're alway going to have them. Perhaps they're just a stage in human progress."

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	12–13	What basic conflict exists between the social and political traditions of nationalism and the changes inherent in new knowledge and inventions?
2	14–15	Which three or four industries in the $.5 billion to $1 billion class would you expect to expand most vigorously or contract most severely in the years following 1925?
3	15–16	Why did the energy needs of the United States from mineral fuels and water power in the 1920's expand over five times on a per capita basis beyond those of the 1870's?
4	14–17	What characteristics are displayed by "mature" and/or "sick" industries?
5	16–17	Why should miles of total track in the United States railroad system continue to climb year after year through 1925 even though miles of roadbed in operation reached an all-time peak in 1916 and receded each year thereafter?
6	16–17	What factors make it likely that miles of total track in the United States railroad system will not continue to climb indefinitely in the years following 1925?
7	17	If you, as president of a large phonograph company, noted that sales for your industry and company fell off 62 per cent while radio industry sales increased twentyfold, what steps might you consider to protect the interests of your stockholders and employees?
8	17	How would you expect future statistics for patents granted by the United States Patent Office to compare with those for 1925 and previous years?
9	17–18	What trends in American business led to the development of the "Muckraker" movement?
10	18	What type of program was advocated by leaders of the Progressive Movement prior to the World War of 1914–18?
11	18–19	What objectives were sought through legislation enacted under President Wilson's "New Freedom" program prior to the outbreak of war in 1914?

QUESTION NO.	PAGE REFERENCE	QUESTION
12	19	What notable contributions did the United States make to the Allied cause from 1914 through 1918?
13	19–20	What measures were taken by the Wilson administration to control America's war economy in 1917–18?
14	20	What were the international implications of the Wilson administration's loss of political control in Congress in the Armistice month of November 1918 and of its final defeat in November 1920?
15	20–22	What effects did World War I have on American imports and exports?
16	22	Why might industrial leaders as a group reasonably favor the expenditure of funds for "basic" or "pure" research, as well as "applied" research?
17	22–23	What should be the legal and social responsibilities of the managers of large business corporations and with what groups do they have dealings?
18	23–24	What were the fortunes of American trade unionism during the war and postwar periods, 1915–20 and 1920–25?
19	24	What steps might reasonably be taken by our schools and colleges to foster the American ideal of "education for democracy"?
20	24–25	As a citizen seeking to advance the national interest of the United States, do you agree today with former President Harding that "we seek no part in directing the destinies of the world" and that our "every commitment must be in the exercise of our national sovereignty"?
21	12–25	Summarize the extent of growth of the American economy from 1900 to 1925 in a half dozen of its more significant avenues of development.

3
At the Half-Century Mark: 1951



"*THIS IS GETTING TO BE QUITE A* custom," remarked Great Grandfather Smith, as he sat facing the television screen. "If I make the 1976 showing I'll be up there myself as one of the wonders of the age."

"Well, Dad, you got the young folks talking about these quarter-century roundups with your stories of the 'good old days' in '01 and '26. Now they have made one into a series of television shows to start off 1951. John has been working on the series for the past six weeks down at Station WHER."

Channel 3, Midvale

Stand by, ladies and gentlemen, for a special event originating with Station WHER, Channel 3, Midvale.

We bring you "The Makings of Tomorrow," the first in a series of hour-long cavalcades of news events and features depicting the story of the last quarter-century.

But what do we find here? This sleek fellow is Mr. Typical, a nephew of Uncle Sam, contemplating peace and plenty throughout the land as we enter the year 1951. Mr. Typical is tuning in his television set just as you and I. We have ten million sets now in the United States, one for every four families, and they are currently being turned out at the phenomenal rate of eight million a year. You know how many TV sets there were back in '26 don't you? Well, not quite zero if we count a number of crude receivers being worked on in experimental laboratories.

Next we have radios. There is Mr. Typical tuning in his console model. He is in tune with the times because he has several sets in his home. There are over 80 million radios in the United States today, two for every family.

Let us flash through a list of modern products, characteristic of our mechanized world. Ah, yes, automobiles. Twenty million in 1926, 50 million today, a 150 per cent increase. Most of us can still scrape by, however, with a 1-car garage. Airplanes? A mere handful in '26, including "barnstormers" left over from World War I. Today we have over 100,000 registered commercial and pleasure craft, plus more than 40,000 operating military planes. This latter figure is a mere fraction of the 110,000 fighters, bombers, and trainers that the United States air arms had in service at the close of World War II. Commercial American airlines were

The photo at the top of the page shows the Atomic Era experiment at Bikini, 1946. The cauliflower after-cloud, after dumping two million tons of water, which had been sucked up by the underwater explosion, rises in breath-taking wrath. (*Joint Task Force One, and U. S. Atomic Energy Commission*)

carrying just a half million passengers annually when Hitler came to power in 1933. This figure had risen to three million at the time of Pearl Harbor. These commercial airlines were carrying 15 million persons nearly six billion passenger miles within two years after V-J Day.

Dropping back to earth and returning home, we find that American homemakers are currently installing more than two million bathtubs, three million kitchen sinks, and five million stoves annually in their homes. More than three times as many employees were producing washing machines, vacuum cleaners, and radio products in 1950 than were so engaged in 1940. Five times as many workers were engaged in the manufacture of mechanical refrigerators in 1950 than were in this field in 1940. The employment figures cited furnish us with a useful index of growth.[1]

The population of these United States, which stood at 76 million in 1900 and at 115 million in 1925, reached 150 million at the midcentury mark. Although our rate of increase is still off from the one-third per decade pace, which we set from 1800 to 1860, and the one-fourth per decade figure, which we achieved from 1870 to 1910, in the '40's it climbed back to the one-seventh figure experienced in the '20's. This rate is almost double the low mark to which we fell during the depression '30's. The birth rate today is roughly comparable to that of the pre-World War I period, and the death rate has fallen one-third since 1915 and almost one-half since 1900. Marriages per 1,000 population are up one-third over the 1900 level and one-fourth over the 1925 level. Divorces have more than kept pace, however, increasing almost three times over 1900 and two-thirds over the 1926 level. One marriage in six is now dissolved in courts of law.

The proportion of the population from 5 to 20 years of age attending school has increased by one-half, from a figure of 50 per cent in 1900 to a figure of 75 per cent in 1950. A great increase in college enrollments is reflected in the fact that 15 per cent of our 20-year-olds are now still in school, whereas in pre-World War I years this figure was found to be in the neighborhood of 8 per cent. The average years of schooling completed by persons 25 years old and older is still less than 10, however (*i.e.*, sophomore year in high school). Only 6 per cent of this 25 and up group have enjoyed the experience of receiving college diplomas.

The post-World War II rush of veterans to colleges has given impetus to an important trend toward the wider availability of the advantages of higher education. Veteran enrollment alone in colleges during the postwar '40's was twice as great as total college enrollment in 1920. Over-all, the post-World War II peak enrollment, numbering better than 2.5 million college students, was four times as great as post-World War I enrollment in 1920.

Despite the important increase, both numerically and proportionally, in school attendance at all levels, the proportion of the population in gainful occupations after World War II fully matched the previous peak reached in 1910. The increasing maturity of the population and the increasing tendency for women to seek employment outside of the home made possible simultaneous increases in these two important categories. The labor force reached a wartime peak of 65.9 million persons in 1944. This group amounted to 63 per cent of our 104.5 million population 14 years of age or older. At this time, 27.4 million (26.2%) other persons 14 and over were keeping house, 4.8 million (4.6%) were in school, and 6.4 million (6.2%) were not in the active labor force for other reasons. The peacetime working force remained above the 60 million mark for the balance of the decade of the '40's. Our new rearmament program following the outbreak of the Korean War bids fair to push employment levels above even the all-time peak set in 1944.

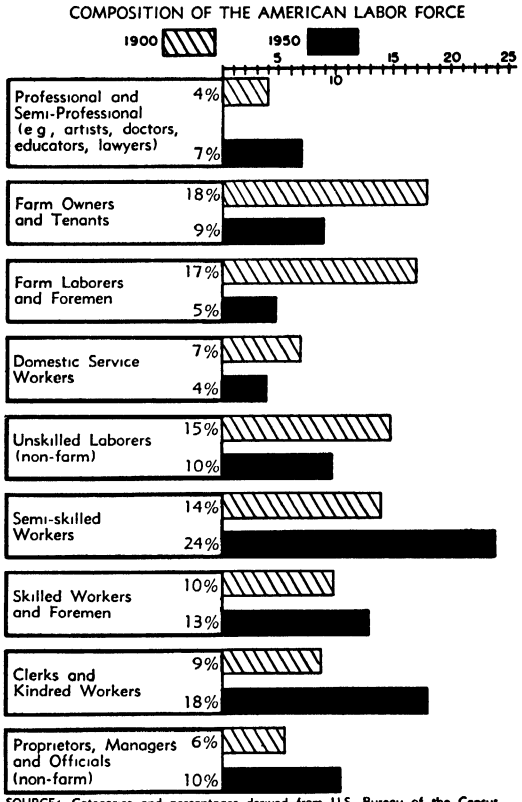
The long-run trend away from agricultural pursuits and toward nonagricultural employment was accelerated during the World War II period. When the decade opened in 1940, more than 9.5 million persons were engaged in agricultural pursuits. At the decade's end this figure had declined toward a new level of 8 million persons. At the same time, nonagricultural employment rose from 38 million at the decade's start to a record figure of 50 million at the midcentury mark. Comparison of these two benchmark figures reveals an impressive gain of 30 per cent in nonagricultural employment during the war decade. The composition

[1] *Statistical Abstract of the United States, 1950.* Washington, D. C.: U. S. Government Printing Office, 1950.

of our total labor force is presented graphically in Fig. 3–2.

The women's suffrage movement, which achieved such striking changes in the composition of the electorate, has had a mild counterpart in the economic sphere. Whereas the number of males in our working force has risen 50 per cent since 1900, the number of female workers has actually doubled. This differential in rate of increase has caused our total working population to shift from 80 per cent male to 75 per cent in composition. Roughly 15 million women and 45 million men comprised the basic American working force of 60 million persons at the midcentury mark. The proportion of women workers is rising again as the country expands its defense production economy.

A survey of broad trends in nonagricultural employment in the past quarter-century reveals significant comparative data concerning



SOURCE: Categories and percentages derived from U S Bureau of the Census, Statistical Abstract of the United States 1950 (71st edition), Washington, D C, 1950

Figure 3–2

various industry groups within our economy. Important benchmark years of this quarter-century are the 1929 business prosperity peak, the 1932 depression trough, the 1943 war production peak, and the 1950 midcentury windup. Total employment in nonagricultural establishments, which stood at 31 million in 1929, dropped off 25 per cent by the end of 1932, rose more than 80 per cent above this 1932 trough during the war, and has exceeded even this wartime peak for the past several years. Over-all employment in these industries is thus up 40 per cent over the 1929 figure and is almost double that of 1932–3.

Eight important categories of nonagricultural establishments are as follows: manufacturing, mining, construction, transportation and utilities, trade, finance, service industries, and government. Relative movements within these groups during the past quarter-century reveal that government employment has consistently led the field throughout the period in expansion over its 1929 employment base. These figures are indicative of a shift in the prevailing concept of the normal role of government in our society, as well as the unusual importance of government activity under depression and war conditions.

The combined employment rolls of Federal, state, and local governments in the United States in 1932 (pre-New Deal) were 5 per cent greater than in 1929. This was in contrast to a one-third drop in manufacturing, mining, and construction employment, a one-fourth drop in transportation and utilities and trade employment, and a one-eighth drop in finance and service industry group employment.

At the height of the war effort in 1943, government employment at all levels rose to 197 per cent of the 1929 figure. This rise was rivaled in per cent only by the increase in the manufacturing industry itself, which employed 165 per cent of its 1929 base and fully 250 per cent of that of 1932. The only other wartime employment increases over 1929 levels were minor ones occurring in the service, trade, and construction industries, which amounted to 21, 14, and 5 per cent respectively. Manpower shortages and controls forced the finance, transportation and utilities, and mining industries to achieve new peaks of output with employment rolls respectively 2, 7, and 15 per cent less than 1929 levels.

Government units today employ two-thirds more people than they did in 1929. Manufac-

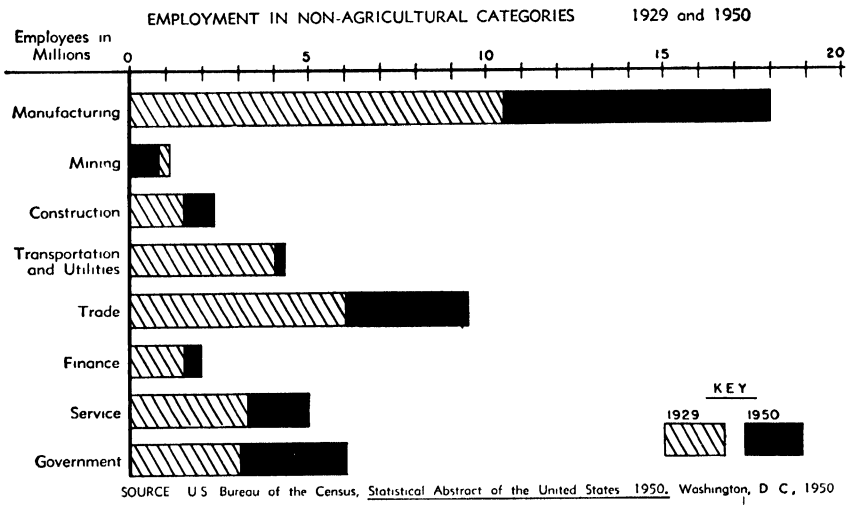


Figure 3–3

turing and service industries both employ today half again as many people as they did in that peak prosperity year of the '20's. Trade industry employment is up approximately two-fifths over 1929 and stands at the average for all eight groups taken together. Construction employment is up more than one-fourth over 1929 boom levels. Finance and transportation and utilities are up just one-eighth and one-twentieth respectively over 1929. Mining is the one group in which improved productivity and high labor costs have both stimulated and enabled the industry to turn out record amounts with one-fifth fewer workers than were required in 1929. [See Figure 3–3.]

The Federal government, which employed one-fifth of all government workers in 1929 and 1932, had on its roles one-fourth of our government personnel as defense preparations accelerated in 1940. It employed one-half of all government workers at the height of war activity in 1943. Today, two-fifths of all government employees work for the Federal government. This figure is double the proportion of government workers so employed a quarter-century ago.

Boom Days

Now let us flash back to those good old days of '26. The gentleman pictured on the screen is "silent Cal"—President Calvin Coolidge—in whose honor the prosperous economic condition in which the country found itself was dubbed "Coolidge Prosperity." In order to get in tune with the times, let us proceed to trail a typical man-in-the-street and see what his problems are. Mr. '26 from this distance looks just as flush as does our current Mr. '51. The typical citizen of 1926 did, as a matter of fact, consider himself well off indeed with his secure job, his new Ford, and his loud-speaker set.

This Mr. Typical on the screen, though, happens to be on his way to Florida, if you please. And what will he find there? Not Hialeah and the horses, nor even Miami and the beaches, but real estate! Here is the great Florida land boom in full swing. Mr. Typical has been reading about the Florida boom all summer and autumn of 1925. Now that winter is here, he is going down himself. That is his life savings bulging in his hip pocket—not liquid spirits! Mr. Typical is going to play the real estate market. Here is the story of the Florida boom of 1925–26 in the words of a contemporary historian:

> There was nothing languorous about the atmosphere of tropical Miami during that memorable summer and autumn of 1925. The whole city had become one frenzied real-estate exchange. There were said to be 2,000 real-estate offices and 25,000 agents marketing house-lots or acreage . . . the city fathers had been forced to pass an ordinance forbidding the sale of property in the street, or even the showing of a map . . . to prevent inordinate traffic congestion.

> The warm air vibrated with the clatter of riveters. . . . Motor-busses roared down Flagler Street, carrying "prospects" on free trips to watch dredges and steam-shovels converting the outlying mangrove swamps and the sandbars of the Bay of Biscayne into gorgeous Venetian cities. . . . The Dixie Highway was clogged with automobiles from every part of the country. . . . People were sleeping wherever they could lay their heads, in station waiting-rooms or in automobiles. The railroads had been forced to place an embargo on imperishable freight in order to avert the danger of famine. . . . How Miami grew! In 1920, its population had been only 30,000. . . . In 1925, it had jumped to 75,000—and probably if one had counted the newcomers of the succeeding months and Miami's share of the visitors who swarmed down to Florida from the North in one of the mightiest popular migrations of all time, the figure would have been nearer 150,000. And this, one was told, was only a beginning. Had not S. Davies Warfield, president of the Seaboard Air Line Railway, been quoted as predicting for Miami a population of a million within the next ten years? . . . Everybody was making money on land, prices were climbing to incredible heights, and those who came to scoff remained to speculate. Nor was Miami alone booming. The whole strip of coast line from Palm Beach southward was being developed into an American Riviera; for 60-odd miles it was being rapidly staked out into fifty-foot lots.[2]

There were a number of causes for this amazing boom. Among them were the climate, the ease of access from the populous cities of the Northeast, the automobile, the popular confidence in "Coolidge Prosperity," the conflicting desire to escape from the urbanization and industrialization that made possible this prosperity, the earlier example of Southern California's land boom, and the belief that bold business enterprise might lead to sudden wealth even in this will-of-the-wisp real-estate trading.

Speculation was made easy and quick by the practice of buying lots from blueprints and delaying title investigations and deed recordings. Most buyers bought their lots only for resale, hoping to reap their profit even before the first payment fell due in 30 days. There was as much truth as fiction in the popular anecdote of a native saying to a new arrival, "Do you want to buy a lot?", and the visitor simply replying "Sold."

The boom-lots were intended for what advertisers called "the world of international wealth that dominates finance and industry . . . that sets fashions . . . the world of large affairs, smart society and leisured ease." Few asked whether or not there would be enough of these fabled specimens to go around. Volume knew no bounds. The advertising columns of the *Miami Daily News*, for instance, swelled a single issue to 504 pages, the largest in newspaper history. The rival *Miami Herald* carried a larger volume of advertising in 1925 than any paper in the world had carried before that year.

By New Year's Day 1926, however, as Mr. Typical appeared on the scene, it was becoming clear to old hands that new buyers were somewhat less plentiful, despite the northern winter. With the coming of spring a wave of defaults on lot payments, abetted by two precisely aimed Florida hurricanes, collapsed the ephemeral Florida land boom in a wholesale deflation of grandiose plans and swollen expectations. By 1928, Editor Henry S. Villard of *The Nation* could describe the approaches to Miami by road as follows:

> Dead subdivisions line the highway, their pompous names half obliterated on crumbling stucco gates. Lonely white-way lights stand guard over miles of cement sidewalks, where grass and palmetto take the place of homes that were to be. . . . Whole sections of outlying subdivisions are composed of unoccupied houses, past which one speeds on broad thoroughfares as if traversing a city in the grip of death.[3]

The Florida boom is described at length in this report as a symptom of the ills of a fabulous decade, ills that left their imprint upon the national economy and upon the national life. All through these years, there was an epidemic of wild promotional schemes de-

[2] Frederick Lewis Allen, *Only Yesterday*, pages 270-1. New York. Harper & Brothers, 1931.
[3] *Ibid.*, page 281.

signed to bring quick prosperity to various American towns and regions. The promoters of the Florida "wonderland" learned to their sorrow that there were many more fellow land-speculators than there were members of the fashionable set. The promoters of land booms outside of many another American city or town found that their bright hopes were doomed to fade away to the accompaniment of bankruptcy and popular disillusionment.

The national speculative fever generated during this period of so-called Coolidge Prosperity was not to subside so easily. When most real-estate boom schemes appeared to be bad bets, the investing public turned to something quite different. Instead of Main Street and Side Street, U.S.A., the new focus of speculation shifted to Wall Street, New York, where a big "bull market" had gathered enough momentum to set the stage for a new and equally fascinating type of betting spree.

The Big Crash

The prosperity of the '20's possessed, at its outset, a reasonably sound industrial operating base. This base became progressively unseated, however, by the pull of a top-heavy and unstable superstructure of securities speculation. In the end, this unbalance brought crashing down a good part of the social and economic structure of the period. Yet the so-called inevitability of this development was by no means so apparent in prospect as it now appears in retrospect.

As early as the fall of 1927, storm signals began to appear upon the face of the economic barometer. Stock speculation increased and stock prices climbed throughout 1927. Yet business activity waned near the end of the year and unemployment figures rose steeply. Seasoned business analysts and forecasters concluded during the early months of 1928 that the stock market had "overdiscounted anticipated progress" and wondered publicly "how much of a readjustment would be required to place the market again in a sound position."

Yet the very month and day that the professional market followers appeared to agree that the "great bull market" had finally run its course, the stock market surged wildly forward as wave after wave of new converts to speculation began "playing the market" for quick profits. Day after day, week after week the contagion spread. "Sound" stocks led the upward surge in price to levels utterly unrelated to expected earnings from the actual activities of the operating companies underlying the stock pyramids. Automobiles and radios, the two brightest jewels of the prosperity, led the market advance that testified to an almost unbounded popular faith in the possibilities of mass-production methods.

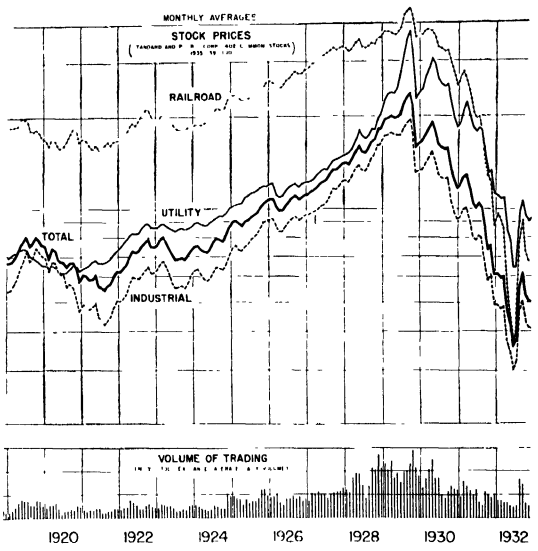


Figure 3–4: "The shape of things to come," post-World War I, included the stock price trend depicted in the chart above (*Brown Brothers*)

Gradually the get-rich-quick psychology of the American public began to infect even the most hard-headed of market specialists. They knew that no bull market such as this had ever been known before, but they began themselves to believe in what rhapsodic boosters long advertised as "the golden future of American business." As in many other mass-psychology situations, what the public chose to believe became for a considerable time the chief determinant of the actual trend of events.

By March 1928, the surging market began to hit page one in the news throughout the nation. General Motors Corporation, which was to have a big year because of Ford production delays in converting to the new Model A, and the Radio Corporation of America, which now dominated the booming radio field, led the big parade. On Monday, March 12, for instance, Radio opened at 120½ and leaped ahead 18 full points to a 138½ close. Other stocks also

made imposing gains. The next day, Tuesday the 13th, Radio opened at 160, fully 21½ points above the closing price of the night before. And so it went, with but brief respites for profit-taking and for the discounting of minor qualms. By May, Radio had climbed well above the 200 mark. In late November, Radio stock, which had once seemed exorbitant at 150 when viewed from an operating profit point of view, had skyrocketed to 400.

By all time-honored pricing methods, Radio, whose 1928 earnings for the first nine months had been $7.54 a share, would not have supported a "ten times earnings" price of much over a flat $100. As Max Winkler adroitly put it, "the market was discounting not only the future, but the hereafter." In December 1928, for a few short hours it appeared that the day of reckoning had finally arrived. Radio, which wavered briefly at 363 in the opening hours, plunged by the day's end a full 67 points to a bargain-basement price of 296. Other leading stocks followed similar, if less precipitous, courses. The market righted itself, however, and within a few months' time it was vaulting along to new peak levels. This was indeed a new era! Prosperity was now seemingly permanent! Stock market fortunes were there for the taking. The man in the street was literally in Wall Street and up to his ears in margin.

On September 3, 1929, the Dow-Jones averages reached their high point for the year. Radio stock, which had opened at a "mere" 94½ eighteen short months before, was perched at an adjusted high of 505 (although through a 5 to 1 stock split the actual quotation was 101). Even on this day, most of the speculating public expected the bull market to climb on and on. "Why, just ride along for 50 points or so and then retire in luxury," was the common plan of action.

By October 4, Radio, in keeping with other stocks, had edged down from an adjusted high of 573¾ths to 412½. Still the expected recovery did not come. Finally, on "Black Thursday," October 24, 1929, Radio, which had opened at 343¾ths (adjusted), plunged down in sickening fashion to a day's-end close of 222½. The stupendous impact of a market gone mad had stunned both the investing and the speculating public. There soon resulted a flood of "sell at the market" orders. Brokers were swamped. The resulting breakdown in normal communications resulted in absolute panic.

For the next month, the market continued to crumble as repercussions of the crash continued to shake the nation. Low price for the year was finally hit on November 13, 1929. Radio slumped on this day to an abysmal 140, off 433 points or 75 per cent from its September peak. Other bellwethers were off in similar fashion—General Motors, General Electric, Westinghouse, Electric Bond & Share, American Can, Montgomery Ward, and Union Carbide, to name a few, all dropping off more than 50 per cent during this black period of deflation. No wonder the daily tabloids featured lurid accounts of spectacular suicides. The decade of the '20's thus ended in a debacle. Yet what of the '30's? Might not recovery be "just around the corner"?

The Great Depression

President Herbert Hoover had accepted nomination 18 months earlier with the statement that "we in America are nearer to the final triumph over poverty than ever before in the history of the land." [4] By the end of 1929, he recognized that the crisis was a serious one. The President held a series of separate conferences in Washington with leaders of business, transportation, and labor in an effort to avert panic and disorderly liquidation. Hoover and his cabinet persisted publicly, however, in their oft-expressed belief in permanent prosperity. President Hoover stated that "the fundamental business of the country, that is, production and distribution, is on a sound and prosperous basis." [5] On New Year's Day 1930, Secretary of the Treasury Mellon still said confidently, "I see nothing in the situation which warrants pessimism." [6] Similarly, Secretary of Commerce Lamont flatly predicted "for the long run" a continuance of prosperity and progress.[7]

Month by month and year by year the economic depression deepened despite the ex-

[4] Oscar T. Barck, Jr. and Nelson M. Blake, *Since 1900*, page 393 New York: The Macmillan Co., 1947.

[5] Harvey Wish, *Contemporary America*, page 414. New York: Harper & Brothers, 1945.

[6] Barck and Blake, *op. cit.*, page 432.

[7] *Ibid.*

hortations of the Hoover administration. Unemployment, which was at a minimal million level in 1929, rose to the six million mark by the end of 1930, to the ten million mark a year later, and to over 14 million by the end of 1932. Moreover, substantial wage cuts and irregular employment were suffered by those workers who were fortunate enough to retain their jobs.[8] Farmers shared in full measure the desperate plight of the city worker. Many of them were faced with the loss of their property through foreclosure of boom-incurred farm loans. Farmers' cash income, for instance, dropped from $11 billion in 1929 to $5 billion in 1932, under highly competitive conditions. Investors and savers were likewise caught in the downward plunge of the crumbling economy. Business failures, including giant utility interests as well as small service establishments, multiplied. Thousands of banks, suffering from the wholesale decline in pre-depression values and from wild depositors' runs, closed their doors in failure. Fully 1,352 banks were forced to suspend operations in 1930 through insolvency. In 1931, 2,294 more followed suit, including the huge New York State bank, the Bank of the United States, with 400,000 depositors. Despite loans of close to three-quarters of a billion dollars from the newly created Reconstruction Finance Corporation (R.F.C.), an additional 1,456 banks were forced to close in 1932.[9] Manufacturers found their markets falling away. Drastic price cuts failed to stem the trend.

By 1932, industrial production was less than half of what it was in the benchmark year of 1929. The building trades were even harder hit as construction fell to a mere one-fifth of its 1929 volume. The railroads, whose financial welfare depends upon general business activity, were swept along in the general collapse to the point where in 1932 fully one-third of the system's mileage had passed into receivership. Over-all national income shrank to $40 billion in 1932, less than half of its 1929 high. The world market also collapsed during these crisis years, as other nations were pushed far down the road to economic nationalism. This movement was furthered by American passage of the ultra-protectionist Smoot-Hawley Tariff bill in 1930.

[8] Wish, *op. cit.*, page 436.
[9] *Ibid.*, page 427.

The 100 Days in '33: A New Deal

Despite President Hoover's warning that Democratic victory in 1932 might mean that "the grass would grow in streets of a hundred cities," the people repudiated the party in power, as is customary in depressions. They turned, amid a deepening financial crisis, to a new popular leader, Franklin Delano Roosevelt, Governor of New York and former Assistant Secretary of the Navy under Wilson. The new President delivered his inaugural address on March 4, 1933, against the background of a nation-wide bank holiday, which placed trade in some cases on a barter basis and threatened the country with complete paralysis.

President Roosevelt at once captured the confidence of his countrymen by the calm and forceful manner in which he handled the great psychological issue of the day. He stated that:

> This great nation will endure as it has endured, will revive and will prosper. So, first of all, let me assert my firm belief that the only thing we have to fear is fear itself —nameless, unreasoning, unjustified terror which paralyzes needed efforts to convert retreat into advance.

He then went on, reassuringly:

> We are stricken by no plague of locusts. . . . Plenty is at our doorstep, but a generous use of it languishes in the very sight of the supply. . . . We must act; we must act quickly.

During the next "hundred days" the new President presented several dozen emergency bills to a willing Congress, and their passage established the nucleus of the promised "New Deal." At the same time, President Roosevelt began his famous series of radio "fireside chats." These talks reassured the people and won widespread support for his triple objectives of "relief, recovery, and reform."

The new Democratic Congress, in special session during the spring of 1933, passed the following important pieces of New Deal legislation:

1. An Emergency Banking Act giving the President power to reopen the banks and issue Federal Reserve banknotes to help meet depositors' runs until confidence was restored.

2. A drastic economy act cutting government salaries and reducing veterans' compensation, particularly in the case of several types of pension abuses.

3. Immediate modification of the Volstead act to permit the sale of "3.2 per cent" beer and light wine pending repeal of the 18th Amendment by passage of the 21st Amendment.

4. The Thomas amendment to the Farm Relief Bill giving the President power to reduce the gold content of the dollar up to 50 per cent, and other inflationary powers.

5. The Glass-Steagall Act separating investment banking from commercial banking in a sweeping reform of the commercial banking system.

6. The Securities Act of 1933 requiring full information on proposed investment issues for the protection of the investor.

7. The Agricultural Adjustment Act to raise farm prices by crop allotment so as to establish farm "parity" to industry, giving agricultural commodities a purchasing power with respect to articles farmers buy equivalent to that enjoyed by farmers in a base period 1909–14.

8. The Emergency Farm Mortgage Act to refinance farm loans over extended periods at reduced interest so as to reduce foreclosures.

9. The establishment of the Home Owners' Loan Corporation, which made the Federal government a lenient creditor in the real estate field and prevented a wholesale collapse of values and mass evictions.

10. The National Industrial Recovery Act, which ambitiously sought to eliminate overproduction, harmful competition, and industrial confusion, and at the same time encouraged labor unions, set minimum wage and maximum hour limits, abolished child labor, and increased employment, including as one method a huge public works program. The President optimistically labeled this attempt at the planned economy "a supreme effort to stabilize for all time the many factors which make for the prosperity of the Nation, and the preservation of American standards." [10]

11. The Civilian Conservation Corps designed to save idle youth from delinquency, to contribute allotments to relief families, and to undertake needed soil and forest conservation measures.

12. The Federal Emergency Relief Act shifting the financial burden of relief to the Federal government instead of state and local units.

13. The Emergency Railroad Transportation Act to promote integration within the transportation system by means of a Federal Coordinator.

14. The Tennessee Valley Authority Act to convert the controversial Muscle Shoals power issue into a regional planning program that would develop power resources, deal with flood control, soil erosion, reforestation, elimination of marginal land, and industrialization of an undeveloped region.

The New Deal action program brought a rise in public confidence, which, in itself, became a force to combat some of the psychological aspects of the depression. Within six months, an economic upturn was clearly in evidence. Unemployment dropped from an all-time high of 16 million in March 1933 to less than 12 million in October 1933, and business activity increased accordingly.

The Complete New Deal: 1933–1939

With the emergency phase of the Roosevelt legislative program largely completed in the special session of 1933, the New Dealers were able to shift their attention more and more from relief and recovery measures to social legislation for basic, long-range reform. These New Deal reform measures were accompanied by a steady increase in the scope of governmental action in the nation's life. Some leading measures of the New Deal action program may be briefly listed as follows:

1. The National Housing Act of 1934, which encouraged home repairs, home construction at low interest rates, slum clearance, and low-cost public housing.

2. The Trade Agreements Act of 1934, featuring reciprocal trade agreements, in the interests of a general downward revision of the tariff.

3. The Securities and Exchange Act of 1934, which created the Securities and Ex-

[10] Wish, *op. cit.*, page 450.

change Commission for regulation of the stock market and of securities issues.

4. The Emergency Relief Act of 1934 creating the Works Progress Administration (W.P.A.) to provide work on useful Federal projects at a "security wage" for able-bodied but unemployed workers.

5. The Social Security Act of 1935 for old-age assistance, old-age insurance, unemployment compensation, and Federal aid to the handicapped.

6. The Public Utility Holding Company Act of 1935, for regulation of "utility empires," including the famous "death sentence clause," which called for elimination of all holding companies except those forming a "geographically and economically integrated system."

7. The National Labor Relations Act of 1936, which encouraged collective bargaining, as had been done earlier in the N.I.R.A. that had been judged unconstitutional.

8. The Fair Labor Standards Act of 1938, which placed "a floor below which wages shall not fall, and a ceiling beyond which the hours of industrial labor shall not rise," and, in addition, restricted child labor. An initial wage floor of 25 cents an hour was set, which climbed to 75 cents by 1949. An initial work week of 48 hours was established, which was soon reduced to 40 hours, before payment of overtime was required.

As war threatened in the Munich crisis of 1938 and then came in Europe in 1939, domestic-minded New Dealers began to pay more attention to foreign relations and national defense. In 1940, President Roosevelt sought and received an unprecedented third term in office in anticipation of a worsening of this world crisis.

America in World War II

While Japanese diplomatic envoys were presenting notes to Secretary of State Cordell Hull, Japanese carrier-borne planes attacked the U. S. Pacific Fleet at dawn on December 7, 1941, at its Pearl Harbor base. Declaring this a date that "will live in infamy," President Roosevelt prepared a war message, which he delivered to Congress the next day. This declaration was followed three days later by similar declarations of war against Germany and Italy, the other partners in the Tripartite Agreement whose ultimate target was now revealed as the United States of America.

The shocking manner in which the Axis attack was launched ended the U.S. debate between isolationists and internationalists at home. The now-united American people girded themselves for an all-out total war. The government quickly shifted to a wartime footing and mobilized its military and civilian resources.

Within four years, the United States built up its army from an ill-equipped force of 1.5 million men on Pearl Harbor Day to a splendidly-equipped fighting machine numbering more than 8.5 million men and women on Japanese Surrender Day (V-J Day). In the early phases of the war, a series of costly and bloody defeats at the hands of the enemy in outlying theaters was the price of our original military unpreparedness. In similar fashion, the U. S. Navy grew tenfold in complement, twentyfold in combat craft, and infinitely more in striking power during the course of the grisly world conflict. The U. S. air forces grew from a mere handful of pilots with supporting ground crews in 1941 to a magnificent striking force of more than 3 million men with close to 100,000 planes of greatly improved design by the war's end.

The War Economy

It is a truism that America's greatest war weapon was its huge potential for industrial production. Still, the problems of converting companies and entire industries from their peacetime pursuits to a full war footing were found to be impressive indeed. The government profited from some of the experiences of World War I and from the trial-and-error steps taken during defense-production days. Yet a number of the earlier mistakes and many new ones were made as the war entered its active stage. In an over-all sense, however, the conversion of a peacetime economy to a wartime economy in the United States was one of the greatest modern achievements.

Under his wartime executive powers, President Roosevelt established the War Production Board in January 1942 under the guidance of Donald Nelson. A former executive of Sears Roebuck Company, Nelson assumed a post similar to that held by Bernard Baruch during World War I. Divisions of the WPB were set up for purchases, production, materials, industry

operations, labor, and civilian supply. Several hundred industrial advisory committees were set up and over 5000 labor-management committees were formed to aid in the immense production drive organized by WPB. The performance of the war production forces of the nation has been well described by Nelson, as follows:

> Between 1941 and the end of 1944 an almost magical transformation of American industry took place. Huge new plants dotted every section of the country. The agricultural South became heavily industrialized. Annual production of steel ingot rose nine million tons. Aluminum production rose from 807 million pounds to 2,179 million. An entirely new, huge, synthetic rubber industry was created. Plant production, in dollar value, was multiplied nearly by ten, tanks by five, naval shipping by more than five, cargo shipping by more than ten. In 1939, our total output of fabricated metal had been $13 billion worth, and in 1944 it was $70 billion; while in the same period the machine tool industry alone expanded production by more than seven times.[11]

Stalin paid fitting tribute to American war production in the meeting of the Big Three at Teheran when he indicated in a toast that without it the enemy could not have been defeated.[12]

A second task undertaken by the government in the wartime economy was that of price control. The Price Control Act of 1942 established an Office of Price Administration, known as OPA, which was empowered to fix fair maximum prices on commodities whenever they rose or threatened to rise unduly. The OPA could control rents and could ration scarce commodities as well. Through the use of more than 5,000 local price and rationing boards, staffed largely by unpaid volunteers, the OPA was able to retard the wartime tendency of prices to rise. It held the total rise in living costs to less than 29 per cent from the outbreak of war to Victory in Europe Day (V-E Day), as compared with a 63 per cent rise between the outbreak of World War I and the armistice. By containing inflation between 1942 and 1945, the wartime OPA saved billions of dollars for both the government and consumers. It also helped to preserve the morale of home front workers.

Government subsidies to farmers were used in combination with OPA price ceilings on agricultural commodities to secure increased farm production, while preventing runaway prices during a time of scarce supply. Despite manpower losses to the armed forces and to war industries and despite a growing lack of new farm machinery, the nation's farmers achieved an enviable production record. Agriculture was more prosperous during the war than it had been at any time during the preceding generation. Farm income doubled between 1940 and 1943, and topped $20 billion per annum for the balance of the war. Total farm-mortgage debt, which had risen to a peak of close to $10 billion in 1930, fell off to $5 billion by the war's end, while farmers performed a vital service.

Through the National War Labor Board, which was established in January 1942 and consisted of four representatives each of labor, management, and the public, the nation minimized time lost to the war effort through labor disputes. It also maintained the morale of its industrial forces at a high level, as shown by the new efficiency and productivity records continually being set. Just as OPA authorities were led to name rollback dates for ceiling control purposes, the NWLB members in July 1942 found in the so-called "Little Steel formula," which allowed a 15 per cent pay increase to compensate for the rise in the cost of living since January 1941, a yardstick for wage scales and a precedent for settlement of wage issues during the rest of the war. Yet even the near abolition of the strike, lockout, and unemployment features of our peacetime labor market would not have yielded the vast pool of extra manhours needed for the war production program. These gains would barely have been enough to offset the 12 million men and women inducted into the armed services Gainful employment increased fully one-third by 1944 over 1940 figures through the training of millions of citizens, particularly women, most of whom had never before been wage-earners. The output of this working force

[11] *While You Were Gone: A Report on Wartime Life in the United States,* Jack Goodman, ed., page 224. New York: Simon and Schuster, 1946.

[12] See Barck and Blake, *op. cit.,* page 682.

numbering 60 million was further increased by the performance of millions of overtime work hours each week.

The financing of this most costly war in history caused problems of new magnitude. By V-J Day the United States government had spent over $300 billion on the war, ten times its outlay for World War I. Yet the public was able to pay a greater proportion of the cost of waging war out of current tax revenue in World War II than during World War I, the figures being 40 per cent and 33 per cent, respectively. The raising of the huge tax sum of more than $120 billion between Pearl Harbor and V-J Day caused a veritable revolution in the pattern and scope of American taxation. Whereas but 4 million persons had paid Federal income taxes in 1939 and 17 million in 1941, fully 50 million persons became direct tax payers in 1942. All persons receiving more than $1,200 if married and $500 if single were required to pay taxes on incomes above these amounts ranging from 24 per cent to 93 per cent in a series of progressive steps. The corporation tax levels were raised, after normal exemptions, to a total of 40 per cent. In addition, "excess" profits (profits in excess of those of an earlier base period) were taxed at the rate of 90 per cent, subject to certain postwar rebates designed to stimulate reconversion. A series of new and increased excise taxes was placed upon such items as transportation, amusements, cosmetics, furs, telephone and telegraph service, beer and liquor. Two great improvements in tax collection procedures were begun during this war period, namely, the 1943 "pay-as-you-go" plan of employer deductions, which was successfully promoted by Beardsley H. Ruml of New York, and the 1944 "Tax Simplification Act," which simplified both the income-tax structure and the tax filing forms.

Despite this emphasis upon taxes, the public debt, which started out just under $50 billion in 1941 increased more than fourfold to top $250 billion at the war's close. Each year of the war, the huge deficit, caused by the 60 per cent or more gap between tax revenues and war costs, had to be raised by borrowing. Through a series of effective war-bond drives and through regular payroll savings plans, fully $40 billion in "E" Bonds were sold to American farmers, industrial workers, and to other small investors. Under the stimulus of induced and enforced wartime saving, the total liquid savings of the American public climbed to a total in excess of $130 billion by the war's end. Both the size of the public debt and its counterpart, the size of liquid savings by the public, represented factors of great importance in the financial structure of the postwar economy.

A New Force Emerges

The coordinated attacks by land, sea, and air, which characterized the great campaigns of World War II, delivered the knockout punch to the Axis powers. Near the end of the war with Japan, there occurred, however, an event that revealed to a weary and slightly incredulous world the existence of a new weapon that would make wars in the future still more hideous and, perhaps, even suicidal for the civilization we know. On August 6, 1945, an American superfortress dropped an atomic bomb on the Japanese city of Hiroshima. Three days later a second atomic bomb of improved design leveled the port city of Nagasaki. Five days later the Japanese government surrendered unconditionally. When it is realized that 14 million of the 80 million combatants engaged in World War II were killed and millions more were wounded, and that untold millions of civilians may be added to these casualty estimates, the implications of the new atomic era are driven home to the peoples of the globe.

Postwar America

The sudden death of Franklin Delano Roosevelt through cerebral hemorrhage, in April 1945, saddened men and women throughout the non-Axis world. It brought to the presidency a man of very different background and personality, Harry S. Truman of Missouri. For a brief "honeymoon" period, he enjoyed the fruits of victory in Europe and in Asia, for which his predecessor had so long labored. President Truman then came face-to-face with the internal problems of demobilization and reconversion besetting the United States and with the even more difficult problems of peace and international organization in what once again became a fundamentally divided world.

The collapse of Japan in the fall of 1945 hastened the demobilization process, which had begun on V-E Day. More than ten million American veterans were returned to civilian life within a year's time. With the prompt

cancellation of over $35 billion of unfulfilled war orders, the removal of a majority of WPB controls, and the removal of excess-profit taxes, the government cleared the road for business to start the long-planned reconversion to peacetime production. Political leaders gloomily predicted mass unemployment of eight million during the conversion process, but the actual total hovered around three million or less. The production of civilian goods in the spring of 1946 increased to 18 per cent more than on V-J Day. Output was over 25 per cent greater than in 1939, the last normal prewar year. Production continued to run far short of demand throughout the first two peacetime years. Acute shortages in vital areas, such as housing, clothing, automobiles, and household appliances, placed heavy pressure on the price structure of the economy.

A principal force making for inflation during the postwar reconversion was the campaign of organized labor to protect and even improve its wartime earnings level. The significance of this movement is emphasized when one notes the end of overtime pay and bonuses in most lines of enterprise. The labor movement in 1945 had reached an all-time peak in numbers and in power, mustering more than 14 million union members at the war's end, as compared to 11 million on Pearl Harbor Day 1941 and a mere 4 million at the time of passage of the National Labor Relations Act of 1935 (Wagner Act). After a series of drawn-out strikes, the first round of wage demands was settled in general by an 18.5 cent per hour average pay rate raise. Among the major industries struck during the spring of 1946 were steel, a sizeable part of the automobile industry, the leading firms in the electrical appliances industry, the American Telephone and Telegraph Company, the coal industry, the New York tugboat companies, and the railroad industry. The steady pressure of industry-wide work stoppages in basic fields of production and transportation strengthened the hands of groups that had long desired laws regulating the activities of labor unions. The actual passage of the "Taft-Hartley" Labor-Management Relations Act came a year later, with a Republican-controlled House and Senate overriding a caustic presidential veto by a vote which involved many Democrats as opponents of the President.

Other domestic measures asked for by President Truman in a social program, which was later called the "Fair Deal," were almost uniformly rejected by the Republican-controlled 80th Congress, elected in November 1946. The voters chose, in effect, to scrap economic controls during the postwar conversion period and to rely upon the natural laws of supply and demand, even though supply was not yet within shouting distance of fleet-footed demand. Aided by these basic political decisions, the cost of living quickly rose by a full one-third during the year after the abandonment of price control. Second and third round wage increases kept inflation snowballing right up to the presidential election of 1948. To the hindsight amazement and chagrin of all pollsters, this election marked an apparently sudden swing back to Truman and his Fair Deal extension of New Deal policies. For what amounted, in effect, to a second full term, Harry Truman was elected President in his own right.

International Relations

The foundations for postwar world order were laid at the United Nations Conference at San Francisco, in April 1945, while the war still raged. Fifty nations joined the new world organization, the objectives of which were stated in the charter preamble as 1) "to save succeeding generations from the scourge of war," 2) "to reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women and of nations large and small," and 3) "to promote social progress and better standards of life in larger freedom." The triumphant Allied leaders convened three months later at Potsdam, near Berlin, to decide the immediate future of the German Reich. They divided the country into four occupation zones to be managed respectively by the Americans, British, French, and Russians. A general Allied Control Council was placed in charge in an effort to secure over-all cooperation among the wartime Allies. By contrast, the Moscow Conference of Big-Three foreign ministers, which formulated principles for the control of Japan in December 1945, left the real occupation power very largely in the hands of General Douglas MacArthur and the American occupation officials.

With the final military defeat of the Axis powers an accomplished fact, the need for subordinating inter-Allied differences over particular issues to the winning of the war van-

ished. A basic cleavage between East and West soon appeared to divide a budding "one world" into two. Prompt economic aid by the United States to western European countries through the Economic Cooperation Administration averted a Russian political march west of her "iron curtain" in Europe during 1947 and 1948. Much progress was made toward European recovery on an independent basis by the end of the decade.

In the Orient, however, the Chinese Communists won final victory on the mainland over the Nationalist government of Chiang Kai-shek during the devastating civil war, which raged from 1946 through 1950. This loss to the West of the great land mass buffer in Asia overshadowed American success in meeting the occupation problems of postwar Japan. The tense situation in the Orient erupted in June 1950 into the Korean War in which East met West for a "limited" engagement on the outcome of which may well hang the arrival or nonarrival of World War III for our generation.

One great unknown in the conduct of international affairs during these years has been the extent to which the American stock-pile of atomic bombs deters the expansionistic plans of other peoples. This "cold war" between the East and the West lasted through the postwar '40's and is a fundamental determinant of our "way of life" in the '50's.

New Postwar Standards

Organized labor's 1945 slogan called for "40 hours of work with 48 hours of pay." Surprisingly enough, this slogan became an economic reality during the remainder of the decade, as postwar America moved forward to attain new levels of peacetime productivity. America's wartime economy, with its huge production goals, its expansion of plant facilities, and its absence of "normal" unemployment, set the pattern for a peacetime economy that continued to make almost full use of the nation's productive capacity. There continued to be employment for practically all persons able and willing to work. The return to a "guns and butter" economy in 1950, of course, increased the pressure for full utilization of our economic and human resources.

The national income of the United States (as measured by "the aggregate earnings of labor and property that arise from current production of goods and services by the Nation's economy") reached a new level of $250 billion as the Korean conflict broke out at the end of the decade of the '40's. This new peak figure was fully one-third greater than our $182 billion national income totals for 1944 and for 1945. During each of these wartime years, the Federal government itself had spent close to $100 billion (55%), which sum was 2½ times the postwar rate of governmental spending for the balance of the '40's. The well-being of the American consumer during the years of peacetime production that followed World War II was of course much superior to that of the average American during the war when half of the nation's output of goods and services was consumed by a voracious war machine. In our new "guns and butter" economy, a national income of $300 to $400 billion will be required if the "guns" are not to cut increasingly into the "butter."

A second measure of the physical well-being of the American nation was afforded by the census of 1950 (cited earlier) which revealed a large growth in population for the country as a whole over 1940 figures, and which pointed out important trends in population age, location, and other characteristics as well.

We have seen how agriculture continued to prosper postwar as compared to all prewar standards. We have seen that labor's share in the fruits of postwar economic activity has increased steadily. We have seen that American business and industry have grown and prospered during the highly productive '40's.

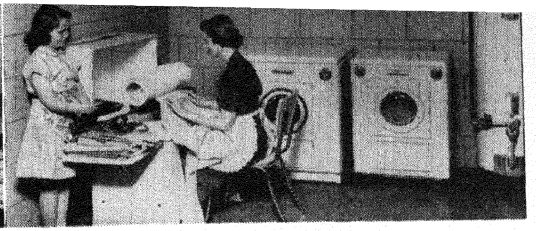
Where We Stand Today

In concluding this telecast series depicting the nation's growth and adjustment during the past quarter-century, we may summarize existing conditions in the following manner:

1. The state of the nation is "good" as we again prepare to defend our "way of life" in whatever manner developments prescribe.
2. The state of the world may be "improving" as we strengthen the determination of the "free nations" to resist aggression and to "make the United Nations work."
3. As always, the future holds many uncertainties for all of us. Now we have added the possibility of an atomic Armageddon. We must move forward, nevertheless, despite the unknown and the unknowable, and live out useful lives.



Modern kitchen



Complete home laundry unit

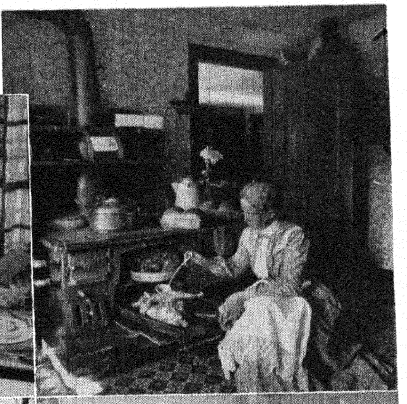
Modern gas stove

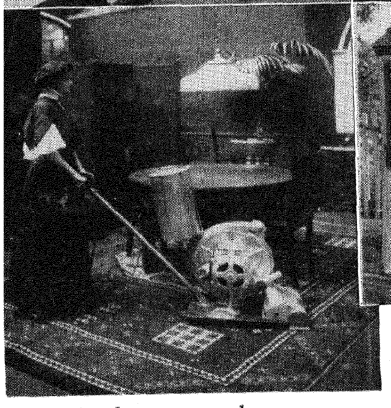


Electric dish washer



Old coal stove





Early vacuum cleaner

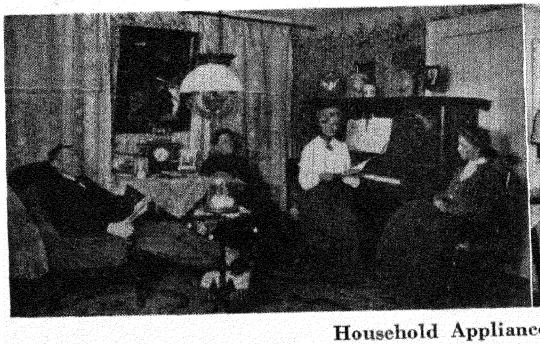


Old well



Modern vacuum cleaner

Old parlor



New living room

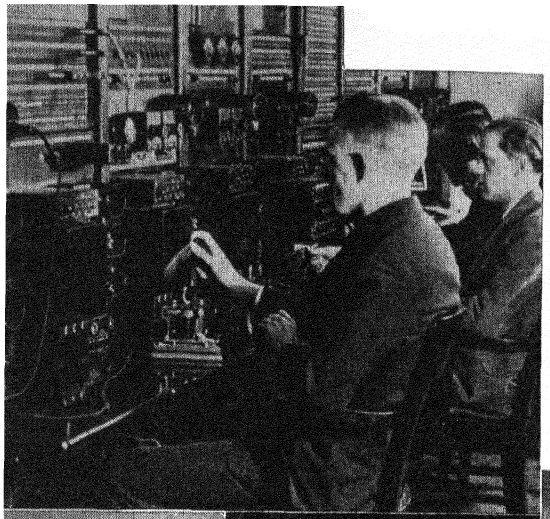


Household Appliances—Old Versus New
(Courtesy Brown Brothers)

QUESTIONS

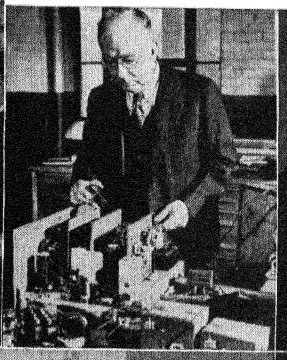
QUESTION NO.	PAGE REFERENCE	QUESTION
1	27–30	From the statistical data presented on pages 27 to 30, describe the background and possessions of a typical urban community of 150,000 Americans in 1950 in a city that closely reflects the national average.
2	29–30	What significance do you attach to the sizeable increases in government employment over the past several decades?
3	30–32	How do you account for the extremes to which the great Florida land boom was carried in 1925–26?
4	32–33	How could Radio Corporation stock climb in price to levels many times a "ten times earnings" figure?
5	32–34	What factors account for a) the strength of the 1928–29 "bull market" and b) the intensity of the 1929 stock market crash?
6	30–34	Why were the prosperous '20's followed by the Great Depression of the '30's?
7	33–36	Why were the 14 million unemployed unable to find employment at the "prevailing market wage" in 1932?
8	33–36	Why were more than 5,000 banks unable to meet their financial obligations during the period 1930–32?
9	34–35	Classify the New Deal emergency legislative measures of 1933 under headings of "relief," "recovery," and "reform." Use duplicate listings, when appropriate, if the major purpose of a measure is twofold.
10	35–36	Classify the New Deal legislative measures of 1934–39 under headings of "relief," "recovery," and "reform," as in question 9.
11	36–38	Describe the functions of WPB, OPA, and NWLB during World War II.
12	36–39	Why did prices rise more during the first two postwar years, 1945–46, than they did during the entire war period, 1941–45?
13	27–40	Summarize the extent of growth of the American economy from 1925 to 1950 in its more significant avenues of development.

Business Enterprise Is People

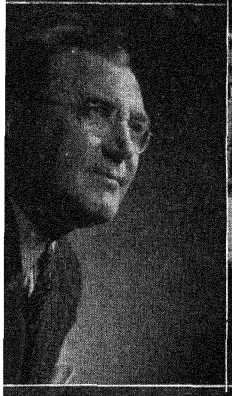






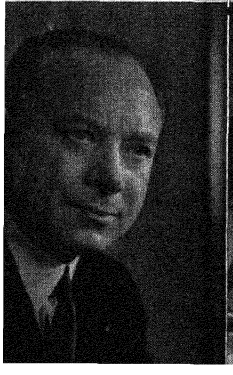




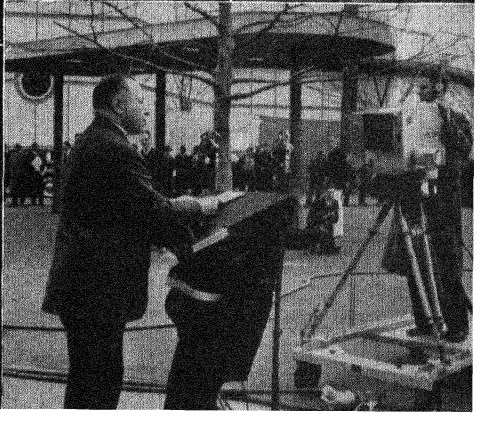












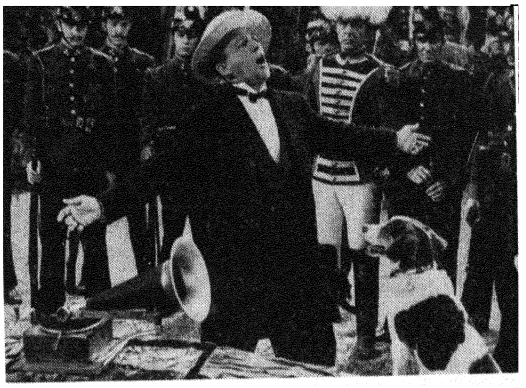
Part B. Business Enterprise Is People

CHAPTER		PAGE
4.	Growth and Development of an Individual Business Enterprise: R.C.A.	45
5.	The General Economic Setting for the Individual Enterprise	74
6.	A Dynamic View of the Individual Firm: G.E.	90
7.	Report on Electronics Park Plant and Equipment	116

The four chapters in this second section are oriented toward people and their individual personalities. They emphasize the fact that in business enterprise particular people are continually planning and performing services for other people in our economy.

Description of Montage Photographs	*Courtesy*
Early radio transmitter control room, N.B.C.	*Radio Corporation of America*
Thomas Alva Edison and early talking machine	*Brown Brothers*
Dr. Alexander Graham Bell and early telephone	*Brown Brothers*
Dr. Frank Conrad and Westinghouse radio	*Brown Brothers*
President Frank M. Folsom of RCA	*Radio Corporation of America*
Charles E. Wilson of G.E. and O.D.M.	*Karsh, Ottawa, Canada*
Young David Sarnoff as wireless operator, 1908	*Radio Corporation of America*
Board Chairman and Statesman Owen D. Young	*General Electric Company*
Brigadier General David Sarnoff of RCA	*Radio Corporation of America*
RCA scientists and color TV picture tube (Dr. Zworykin at right)	*Radio Corporation of America*
David Sarnoff in ceremony symbolizing inauguration of new TV era, New York World's Fair, 1939	*Radio Corporation of America*

4
Growth and Development of an Individual Business Enterprise: R.C.A.



*THE STORY OF THE RADIO CORPO*ration of America, a leading company in an industry born and bred in 20th-century America, has been selected for presentation in this chapter. It conveys the full flavor of those ingredients of forward drive, bold experimentation, and continuous adaptation that have made possible the accomplishments of American business enterprise. This case concerns itself with the adjustment of a firm to such variables as 1) the changing external environment, 2) different stages of technological development, 3) new relationships in the competitive situation, and 4) shifts in personnel. It emphasizes organizational, manufacturing, and distribution problems as well as financial and legal aspects of corporate existence. The "business is people" theme of this text is reflected in the consideration of outstanding R.C.A. management personalities in their relationships to their fellow employees, stockholders, customers, competitors, the community, and the nation.

Photo at top of page: "His Master's Voice"—Bing Crosby symbolizes RCA-Victor trademark as he sings the "Emperor Waltz." (*Brown Brothers*)

BACKGROUND NEGOTIATIONS CREATE THE NEED FOR A COMPANY [1]

The events leading to the establishment in 1919 of the mammoth Radio Corporation of America trace back to the spring of 1912 when the head of the legal department of the General Electric Company was killed in one of the earliest fatal automobile accidents on record. A Boston lawyer, Owen D. Young, was thereupon selected to fill the post of chief counsel for G.E., which at that time was already a leading manufacturer of electrical equipment. Young, who knew little about wireless and radio at that point, nevertheless founded the Radio Corporation of America just seven years later as a climax to one of the most unusual series of events in commercial history.

Owen D. Young first became interested in radio in 1915 when Guglielmo Marconi, the "father" of wireless, scheduled a conference with him concerning G.E.'s well-known Alexanderson alternator. These machines were of great interest to the Marconi companies, which at that time dominated the wireless communication industries in Italy, Britain, the United States, and, indeed, the entire

[1] The facts narrated in this section have been recorded in Gleason L. Archer, *History of Radio to 1926*. New York: The American Historical Society, Inc., 1938.

world. Marconi's negotiations with Young for exclusive rights to the use of the Alexanderson alternator, in return for purchase of a substantial number, were terminated abruptly by the trend of events in the war in Europe, which brought Marconi's recall to military service in Italy.

In the spring of 1919, agents of the British Marconi Company again approached the General Electric Company concerning the acquisition of rights to the Alexanderson alternator. This device had now proved itself to be one of the leading inventions of all time, as it provided sufficient power to permit world-wide broadcasting. President Woodrow Wilson's broadcast direct to Germany of his famous Fourteen Points for a "just and lasting" peace provided one dramatic illustration of the power of this American invention. G.E. had greatly expanded its facilities for production of alternators during the war production drive. With the end of hostilities, G.E. found itself embarrassed temporarily for want of peacetime orders. This was the case, at least, until an attractive British Marconi Company bid was received.

In March 1919, two leading officials of British Marconi—General Council Sidney S. J. Steadman and Vice-President and General Manager of the American subsidiary Edward J. Nally—initially offered Young $127,000 apiece for 24 alternators, with more orders to follow. This proposition was to include, however, the granting of exclusive rights to the invention by G.E. to the Marconi interests.

Young and other G.E. officials were attracted by this timely offer. At the same time they were acutely aware of the future implications of the conditions attached. They sought to resolve the issue by using a device that the shoe machinery manufacturing companies used successfully to retain ownership of patents. Young offered to furnish the alternators on a royalty basis. The Marconi interests did not relish this arrangement. After a number of days of bargaining, Nally finally formulated the Marconi proposal as an offer to buy the alternators outright and to grant a million-dollar bonus in lieu of royalty on a fixed number of machines.

At this critical point in the negotiations, the United States Navy Department evidenced an interest in obtaining the services of inventor Alexanderson in connection with one of the alternators that had been installed during the war at its Long Island station. Sensing that the unfolding drama was of vital importance to American interests, Young addressed a letter to Acting Secretary of the Navy Franklin Delano Roosevelt on March 29, 1919. Young advised Roosevelt both of G.E.'s desire to cooperate with the American government and of its current negotiations with British Marconi for sale on a royalty basis of a substantial number of high-power alternators.

Mr. Roosevelt referred the letter to Captain S. C. Hooper, officer in charge of purchase of navy wireless equipment, who realized that the future of American radio might be jeopardized by completion of the impending arrangement. If the British Marconi Company were to acquire sole rights to the alternator patents, or even to acquire rights to the first postwar output of the G.E. facilities, American commercial radio interests might not be able to overcome the lead that British Marconi could thereby develop both within this country and throughout the world. Hooper lost no time in familiarizing his superior officer, Admiral William H. G. Bullard, director of the Naval Communications Service, and Acting Secretary Roosevelt with the critical situation. Roosevelt invited G.E. officials to an immediate conference in Washington. He requested in his letter that no agreement be made with the Marconi companies before conferring with representatives of the U. S. Navy Department.

Bullard visited Young informally in his New York office in advance of the formal meeting. He confided that he had returned from the Paris Peace Conference, at the direction of President Wilson, to talk about the radio situation. He related that President Wilson considered the influence of the

United States in world affairs to be closely tied in with its relative position in three vital fields: petroleum, international transportation, and international communication. The United States held the edge in petroleum with its rich oil resources, but Britain was far ahead in international transportation with her traditional shipping activities. Communications would at best prove a stand-off. Britain was ahead in cables and the United States had an opportunity to cancel this advantage in the wireless radio field. President Wilson, while visiting certain European states during the Peace Conference, had found school children learning the Fourteen Points, which had been carried to them from across the Atlantic through power supplied by the Alexanderson alternator. This verification of radio's potentialities in international relations deeply impressed the President.

Admiral Bullard was faced with the need for asking G.E. to refrain from selling to British interests $5 million of specialized equipment in a transaction that included a handsome royalty arrangement. At the time, no other active market existed. During this period, American wireless radio facilities were still in the hands of the government under its war powers, and Congress was debating whether or not they should be returned to private owners. G.E. had amply demonstrated its patriotism during the recent war, and it had expensive manufacturing facilities and a highly-skilled organization that would be made idle unless immediate sales were forthcoming. As a commercial company, it was hardly in a position to refuse to sell its products to an established customer who was eager to purchase on generous terms.

Nevertheless Admiral Bullard's personal appeal to patriotism prevailed. The G.E. board voted to terminate negotiations with the Marconi officials. The question, which then had to be faced, was "Where do we sell our output?" Since no suitable American outlet existed, Admiral Bullard argued convincingly that G.E. should itself take the lead in organizing a powerful new American company in the communications field. The company's leaders replied that their organization was engaged in the manufacturing and selling of electrical equipment and supplies, and that their executives knew little about the communications field. Bullard countered with the assertion that such sponsorship as he was suggesting would greatly strengthen G.E.'s position as a manufacturer of electrical equipment. It would create a large customer and steady market for this specialized equipment. Once again Bullard's persuasion prevailed. As the New York meeting closed, Young and other company officials agreed that, if major difficulties could be ironed out and government cooperation could be obtained, G.E. might undertake to launch an American-owned-and-controlled communications company. Thus did Owen D. Young, who was later to distinguish himself as a statesman in negotiating the Young Reparations Plan with Germany, undertake in 1919 a most difficult and complex task with widespread national and international implications.

R.C.A. IS FOUNDED

Although the Marconi interests, operating through the American Marconi Company, appeared to have a firm grip upon wireless communications in the United States at the time, several basic factors operated to weaken this hold and to favor the enterprise being developed by Young. In the first place, the United States government was known to favor the idea of a domestically-controlled, over a foreign-controlled, corporation in the wireless field for national security reasons. Secondly, the Alexanderson alternator and a second type of sending apparatus, the Poulsen arc, were products of American manufacturers and could be withheld from the Marconi Company. Thirdly, and most important, the patent situation in the radio field was so confused and complex that each of four rival companies was in a position to block the others with patents controlled by it. No single company was able, however, to fit together

a complete system of patented parts for radio broadcasting and receiving. The Marconi companies, the General Electric Company, the Westinghouse Electric and Manufacturing Company, producer of electrical equipment, and the United Fruit Company, an export-import firm that utilized wireless extensively for commercial messages, were the four rival concerns whose interests would have to be brought together before significant progress could be made toward achievement of a satisfactory commercial radio system in the United States.

The American Marconi officers were favorably disposed toward the Young venture from the outset. Their attitudes resulted both from the above four considerations, which they recognized to exist, and from the fact that the G.E. officers were willing to give American Marconi Company officials responsible positions in the contemplated corporation. Young's strategy was well conceived, for the American Marconi officials possessed valuable "know-how" in the wireless communications field.

Edward J. Nally, vice-president and general manager of the American Marconi Company, was convinced that outright purchase of British interests in his company was the only way to protect the rights of American Marconi stockholders in an essentially hostile national community. He volunteered to undertake the task of persuading his British associates to sell out to the American group backing the proposed new corporation. After two months of diplomacy and discussion, the British Marconi officials were persuaded to sell their 364,326 shares of American Marconi stock in a transaction that involved many millions of dollars. The way was thus cleared for G.E. to press forward its plans for the formation of a domestically-owned corporation to be called, appropriately, "The Radio Corporation of America."

The Radio Corporation of America was granted a charter as a corporation under the laws of the State of Delaware on October 17, 1919. Its sponsor company, General Electric, received 135,174 shares of R.C.A. preferred stock at par value of $5 and two million shares of common stock without par value in return for 1) payment to R.C.A. of $287,262 in cash, 2) transfer of valuable rights and privileges, and 3) certain payments to the British Marconi Company. By agreement between G.E. and American Marconi, the Marconi stockholders exchanged their stock for stock of the Radio Corporation of America. R.C.A. exchanged two million shares of common stock and two million shares of preferred stock for the physical properties, patent rights, and intangible assets of the American Marconi Company. Thus, on November 20, 1919, the American Marconi Company became officially merged with R.C.A. American Marconi brought its officers and operating forces, as well as its physical assets approximating $10 million, into the new, American-controlled, communications corporation.

THE CROSS-LICENSING AGREEMENTS

Simultaneously with the American Marconi-R.C.A. merger, Young arranged a cross-licensing agreement between R.C.A. and G.E. This was the first in a series of cross-licensing agreements, which consolidated effectively the conflicting interests in radio patents of a half-dozen rival American corporations and enabled an integrated national communications system to emerge. Under this agreement, R.C.A. received rights to use inventions and patents held by G.E. General Electric, in turn, received reciprocal rights, both present and future, in patents and inventions owned by R.C.A. Although the cross-licensing plan has been criticized subsequently for tying great corporations together through a pattern of reciprocal agreements, it must be remembered that, at the time, the R.C.A. venture was regarded as semipublic and semipatriotic in nature. It amounted to an effort to mobilize under single-group control the great bulk of the commercial wireless communications resources of the nation.

At the first annual meeting of the newly-

formed R.C.A. on May 4, 1920, Owen D. Young was elected chairman of the board and Edward J. Nally became president of the company. David Sarnoff, commercial manager of the American Marconi Company at the time of merger, was retained as commercial manager of the new corporation. On April 29, 1921, Sarnoff was given the title of general manager.

On one front, the new concern was faced immediately with outright warfare. The Westinghouse Electric and Manufacturing Company of Pittsburgh also turned its attention toward the manufacture and sale of wireless communications apparatus as a means of utilizing plant capacity in this field, which had been developed during the war. On another front, however, Young scored a brilliant success. On July 1, 1920, a cross-licensing agreement between G.E. and the American Telephone and Telegraph Company was signed to cover all aspects of the manufacture and sale of electrical equipment and apparatus. Extension agreements signed on the same day brought G.E.'s protege, R.C.A., and American Tel's subsidiary, the Western Electric Company, into the contract coverage. This particular cross-licensing agreement not only eliminated the direct competition of the powerful "Telephone Group," but it also brought to G.E. and R.C.A. the use of De Forest's audion and other important patents soon to prove of almost incalculable value in the new era of commercial broadcasting.

One year later, on June 30, 1921, Westinghouse and its subsidiary, the International Radio Telegraph Company, finally agreed to join the emerging "Radio Group" through a cross-licensing agreement. Westinghouse apparently had become disheartened by this time over defeats administered by R.C.A. in a competitive struggle for patent rights and traffic agreements. Under terms of this agreement between R.C.A. and Westinghouse, the International Radio Telegraph Company was merged with R.C.A. This final step in the cross-licensing movement gave R.C.A. complete control of wireless transmission within the United States, as well as a dominant position in the industry on other continents.

INTERESTS OF PARTICIPATING COMPANIES

The Radio Corporation of America, which had absorbed both American Marconi and International Radio Telegraph, then represented the consolidation of the commercial interests of two main groups and several subgroups of great American corporations, as follows:

1. The Radio Group, consisting of a) the General Electric Company, b) the Westinghouse Electric and Manufacturing Company, c) the United Fruit Company, d) the Tropical Radio Telegraph Company, e) the Wireless Specialty Apparatus Company, and f) R.C.A. itself as successor to American Marconi; and

2. The Telephone Group, consisting of a) the American Telephone and Telegraph Company, and b) the Western Electric Company.

All of the companies were given R.C.A. stock in return for funds supplied, for patents and inventions made available, and for other services rendered. In addition, both G.E. and Westinghouse designated R.C.A. as exclusive sales outlet for their wireless apparatus. Initially, this corporate ownership plan spared R.C.A. the necessity for raising money from the investing public and the sales outlet plan eliminated the necessity for establishing manufacturing facilities of its own. Such facilities would have involved an investment of many millions of dollars in plant and equipment and many thousands of hours in organization recruitment and training time.

Along with its main purpose of establishing a national wireless communications system for the United States, R.C.A. provided G.E. and its associated companies with a market for electrical apparatus to be used in this communications system. Moreover, through Young's sponsorship of cross-licensing agreements, two great rival electrical equipment manufacturers, G.E. and West-

inghouse, were brought together sufficiently to consolidate their wireless manufacturing interests by abandoning the rival sales organizations they had formerly maintained. Both utilized R.C.A. as the single sales outlet for their combined wireless equipment output. At the time of the formation of R.C.A., G.E. had a larger volume of wireless equipment sales than did Westinghouse. The two parties agreed to perpetuate this ratio by having R.C.A. purchase 60 per cent of its merchandise from G.E. and 40 per cent from Westinghouse.

THE "RADIO BOOM"

Hardly was the ink dry on the final cross-licensing agreement when a series of events occurred that drastically changed the basic considerations upon which the agreements had been drawn and the respective interests of the parties had been adjusted. None of the company strategists had anticipated the spectacular developments destined to follow the radio broadcasting experiments soon to be performed by Station KDKA in Pittsburgh. The sudden advent of modern commercial broadcasting, involving wireless transmission of the human voice and of music for what was termed "mass entertainment," generated a nation-wide radio boom. This sudden demand for radios upset the fine balance just achieved in the wireless communications field. The ramifications of the situation were complex indeed. They involved the relationships of the Radio Group and the Telephone Group within R.C.A., the relationships of G.E. and Westinghouse within the radio manufacturing field, the relationships of R.C.A. and its "godfather" companies, and the relationships of the R.C.A. group to other firms entering the great new radio industry, which was to spring into large-scale operation almost over night.

The radio boom of 1921–22 brought into being a new type of manufacturing in the wireless field. A demand arose for radio parts for home-made sets, vacuum tubes for new sets and replacements, and complete factory-constructed radio sets. In a few short months, the traditional manufacturing needs of wireless, as encountered in commercial messages sent across the seas, from ship to shore, from ship to ship, and from point to point within the continent, were overshadowed. The established companies were deluged with orders for radio broadcasting transmitters and for radio receiving sets and parts. The majority of these companies could not legally undertake to fill many of these orders, even if facilities were available in their plants. They had bound themselves just a few months before in the cross-licensing agreements to respect the exclusive rights of others to operate in particular fields. As an example, for over two years after the agreements were signed, the Radio Group, headed by G.E. and Westinghouse, turned over to the Telephone Group all orders or inquiries received for radio transmitters. The Telephone Group refrained completely from a natural temptation to devote some of its extensive production facilities to the manufacture of radio receiving equipment for a market in which demand far outstripped supply. It was only after intense bitterness and constant bickering had caused the respective legal departments of the two major groups to re-examine the provisions of the cross-licensing agreements that the existence of rights to manufacture and sell each other's specialties was asserted and action was taken to meet pent-up demands.

SARNOFF'S "RADIO MUSIC BOX"

The radio boom had not been completely unforeseen at the product development level in R.C.A. or in the predecessor American Marconi Company, even though its arrival caught these and other companies unprepared from an over-all planning point of view. As far back as November, 1916, Sarnoff, then commercial manager of American Marconi, had written a recommendation to General Manager Nally that their company undertake a "Radio Music Box" scheme of development. This plan, according to Sar-

noff, "would make radio a 'household utility' in the same sense as the piano or phonograph," [2] the idea being to bring music into the house by wireless. "The proposed 'Radio Music Box,'" continued Sarnoff, "can be supplied with amplifying tubes and a loud-speaking telephone, all of which can be neatly mounted in one box. The box can be placed on a table in the parlor or living room, the switch set accordingly and the transmitted music received. . . . The same principle can be extended to numerous other fields as, for example, receiving lectures at home which can be made perfectly audible; also events of national importance can be simultaneously announced and received." Sarnoff forecast further that "the manufacture of the 'Radio Music Box' including antenna, in large quantities, would make possible their sale at a moderate figure of perhaps $75.00 per outfit." He stated: "Aside from the profit to be derived from this proposition, the possibilities for advertising for the Company are tremendous; for its name would ultimately be brought into the household and wireless would receive national and universal attention." No action was taken by American Marconi on this proposal, for World War I soon absorbed its entire resources.

Mr. Sarnoff repeated this "Radio Music Box" suggestion to the directors of R.C.A., in January, 1920,[3] almost a year before KDKA's experiment launched the radio boom. He obtained a modest appropriation of $2,000 to build a model "Radiola" receiving set as a step in the eventual implementation of the idea. Meanwhile, Westinghouse proceeded independently in constructing radio sets similar to wireless telephone sets, which had been manufactured for army use during the war. Westinghouse marketed these sets to meet the immediate demand created by Station KDKA broadcasts. When Westinghouse joined in the cross-licensing agreements and the R.C.A. sales outlet agreement in July of 1921, the Radio Corporation of America was in a position to market several types of Westinghouse crystal sets immediately. Several types of G.E.-built sets were shortly forthcoming as a result of the follow-up on Sarnoff's "Radiola" or "Radio Music Box" idea.

That the Radio Group developed radio sets energetically once it became alerted by actual public demand may be judged readily from an inspection of R.C.A.'s sales lists of this period, shown in Table I on page 52.

Nevertheless a golden opportunity had been missed by the directors of R.C.A. in treating casually Sarnoff's suggestion that his "Radio Music Box" idea be pushed rapidly and his prophecy that a radio boom would shortly follow. Sarnoff's actual forecast of "Radio Music Box" sales for the initial months after its advent in the market was remarkably realistic, as may be judged from Table II on page 52.

In analyzing the reasons why the Sarnoff proposal was not pursued more energetically by the R.C.A. board in January, 1920, we must keep in mind both the external environment and the internal management personnel conditions that prevailed. In the first place, the KDKA broadcasting experiments were still some 10 months away. Radio communication was considered a plaything of the amateur, with no significant commercial future based on test. No sense of time urgency, therefore, was felt by the R.C.A. directors. Their willingness to put up $2,000 for experimental construction of a radio set was in reality a bold use of venture capital, even though the amount was small. Secondly, the youthful, aggressive commercial manager, David Sarnoff, was not at first accepted by some of the more conservative members of the R.C.A. board. This was particularly the case when he launched into an enthusiastic explanation of some of his rather startling ideas. Moreover, certain subordinate officials of

[2] *Ibid.*, page 112.
[3] *Ibid.*, page 189.

TABLE I: R.C.A. SALES LISTS, 1921–23

Date of List	*G.E. Models*	*Westinghouse Models*	*Wireless Specialty Models*	*Total Number of Models*
August 21, 1921	0	2	0	2
March 1, 1922	3	5	0	8
August 21, 1922	4	5	2	11
May 1, 1923	6	8	1	15

TABLE II: R.C.A. RADIO SALES, 1922–24

Year	*Sarnoff Estimate, 1920 (millions)*	*R.C.A. Actual Radio Sales (millions)*	*Deviation: Estimate from Actual (per cent)*	*Radio Market Supplied by R.C.A. (per cent)*
1st, *i.e.* 1922	$ 7.5	$11.0	—31.8	18.3
2nd, *i.e.* 1923	22.5	22.5	0.0	16.5
3rd., *i.e.* 1924	45.0	50.0	—10.0	13.9

R.C.A. and of the "godfather" companies are reported to have sought in the early days to discredit Sarnoff so that they might themselves inherit either his position or his authority within the rapidly-growing R.C.A. organization. As a result of his great ability, his persistence, and his hard work, David Sarnoff at length prevailed in this struggle. He won approval from the directors of R.C.A. for himself and for his policies as general manager of the concern. The members of the R.C.A. operating organization soon respected him, and readily followed his leadership.

R.C.A. found itself only partially prepared for radio sales at the time when the radio boom struck the nation. The startling magnitude of the demand that developed caused R.C.A. to lose at once the commanding grip it had expected to possess within the radio communication field.

COMPETITION AND TECHNOLOGICAL CHANGE

A host of new manufacturers appeared on the scene in 1922 as an outgrowth of R.C.A.'s inability to meet the demand for radio sets. Many competing concerns openly infringed the radio patents that the R.C.A. group owned. Many felt, perhaps, that there was safety in sheer numbers outside the law or that the law itself was uncertain. Other companies were more responsible, both in their business dealings and in their performance standards. They arranged for purchase of permits to manufacture under R.C.A. licenses as soon as the confused patent situation was clarified in 1927 28. Among these latter companies were such well-known firms as Zenith Radio Corporation, Crosley Radio Corporation, Atwater Kent Manufacturing Company, and the Philadelphia Storage Battery Company (Philco). Nevertheless, the American public was victimized during the early days of the radio boom by numerous fly-by-night manufacturers whose eagerness to reap the harvest far outweighed their technical competence or their moral restraint.

When the cross-licensing agreements and unified sales outlet plans were made, mass broadcasting to home receivers, improved recordings played on electrical phonographs, and transmission of sound and pictures over television sets were not yet envisaged as feasible commercial projects by the directors of the participating companies. What they visualized as the typical function of this new communications com-

pany was the purchase for use or resale of heavy items of communications transmission and reception equipment, such as the Alexanderson alternator, the Poulsen arc transmitter, or other expensive commercial apparatus. When it was agreed that R.C.A. might purchase these radio devices at a 20 per cent mark-up (a price 20 per cent above cost) from G.E. or Westinghouse on a 60-40 allocation basis, it was believed that R.C.A. would obtain the product of the world's foremost research and manufacturing organizations without the expense of attempting to create duplicate facilities of its own.

The sensational public demand for home radio sets and parts upset the market allocation picture and drastically altered the characteristics of the market itself. The field had become a rapidly-progressing, quickly-changing one. R.C.A. soon acquired for itself much of the experience in radio technology that was being built up by the research and engineering departments of G.E. and Westinghouse. Indeed, R.C.A. found itself faced with the necessity of integrating the oftentimes conflicting views of three—not one—research and engineering departments, and of harmonizing the resulting views with public demand as assessed by the sales department. As orders were apportioned on a 60-40 basis between G.E. and Westinghouse plants, difficulties cropped up in achieving standardized parts for various lots of a single piece of equipment that bore the R.C.A. label, but that in one instance was manufactured by G.E. and in another instance was manufactured by Westinghouse.

Under these circumstances, General Manager Sarnoff of R.C.A. was forced to exercise his powers of foresight to the fullest. In order to coordinate the manufacturing efforts of G.E. and Westinghouse with the sales efforts of R.C.A., he had to push the three organizations on toward quick agreement in matters of design and construction. He then had to forward in writing, many months in advance of their market introduction, his estimate of public demand for the particular models and styles in question, all of this planning to be divided skillfully on a 60-40 basis. In theory, R.C.A. was obtaining cheaply the advantages of years of research and development by G.E. and Westinghouse, as well as the use of their extensive plant facilities. In practice the close and continuing coordination required at every stage in the production process prevented Sarnoff and R.C.A. from achieving highly desirable flexibility in the manufacturing process. By the tripartite nature of the arrangement, R.C.A. was consistently delayed in final selection of new models. By the rigidity of the arrangements once agreed upon, R.C.A. engineers were discouraged from seeking to improve and modify parts as occasion arose during the actual process of manufacture. As a result, R.C.A. was all too frequently faced with the problem of marketing to the public large quantities of obsolescent sets. This irritating experience imbued Sarnoff with the desire to obtain manufacturing rights for R.C.A. through modification of the original agreements with G.E. and Westinghouse as rapidly as the bargaining power and financial resources of the new company would permit.

PATENT PROTECTION AND RESTRAINT

On another front during this period, R.C.A.'s efforts to cope with competition and technical change met with more dubious success. As R.C.A. owned or had exclusive licenses under the great majority of the strategic radio patents in the country, it had the legal right to restrain unlicensed manufacturers from producing radio sets that infringed these patents. As has been indicated, the entire country was deluged within a few months after the start of the radio boom with "bootleg" equipment from the assembly lines of literally thousands of unlicensed manufacturers.

In the spring of 1923, the R.C.A. board of directors finally determined to risk charges of "monopoly" in the press by bringing to court a test case of infringement against the A. H. Grebe Company, a

well-known radio manufacturer at that time. R.C.A. sought an injunction to restrain the Grebe Company from further use of radio parts involving five key R.C.A. patents without first obtaining a license from R.C.A. As was to be expected, radio manufacturers from all over the United States rallied to the Grebe banner, for, if Grebe was outside the law, they themselves were occupying the same uncomfortable position. A wave of protest from small radio manufacturers and their many friends in local communities deluged Congress. Within a few weeks, a congressional investigation of the "iniquitous radio trust" was started. Headlines in the press played up every aspect of the cross-licensing agreements that appeared at first glance to furnish prima facie evidence of guilt. Young's efforts to recreate before hostile audiences the semi-patriotic atmosphere under which the key figures in the communications drama had reached decisions in postarmistice days fell upon deaf ears. This was particularly the case in light of the anti-League, antiarmament sentiment which was rampant in the early '20's.

For the sake of the record, it might be well to summarize R.C.A.'s main points in defense of illegal monopoly accusations. Young pointed out that he and his associates had undertaken an international task at the request of the Navy Department, as spokesman for the U. S. government. He introduced evidence to support the assertion that R.C.A. could not have accomplished its task except through a pooling of radio patents, just as the government itself had done during World War I under its war powers. Cross-licensing was described by him as a necessary device for the accomplishment of this pooling by commercial companies involved in a joint effort to create a national communications system.

Editorializing more specifically on the Grebe Company patent infringement case, Editor Arthur H. Lynch of *Radio Broadcast,* in March 1923, contributed the following body blow to the public relations efforts of R.C.A., which was typical of the attitude of the press at that time:

> The A. H. Grebe Company, one of the better known radio manufacturers, is now being sued for infringement of five different patents owned by the Radio Corporation—patents issued to De Forest, Langmuir, Lowenstein, and Mathes over a period reaching from 1902 to 1922, these patents covering tubes and circuits for using tubes. Should the injunction which is sought by the Radio Corporation be granted, it seems that every manufacturer in the country would be put out of business—excepting, of course, the Radio Corporation itself. It seems that a monopoly of the most grinding sort is the object of this firm. . . .[4]

R.C.A.'s rejoinder appeared two months later in the same magazine and read, in part, as follows:

> It [R.C.A.] has made great outlay for research and development work in perfecting its own inventions, and to advance the radio art it has also been considered wise to acquire the inventions of others. In no other way could the various improvements and best features of the numerous inventions—no one of them adequate in itself—which are regarded as requisite to satisfactory radio service, have been assembled and made available for the public in any one line of apparatus. . . . Thus far, the public, and a few manufacturers and dealers—some legitimate, but many of them infringers—have profited from the development and production of radio apparatus. The stockholders of this corporation whose money and faith in the patent laws have contributed to the technical achievements largely responsible for progress made have not yet drawn a dollar of profit. . . .
>
> An infringer of patents has the advantage that he has no patent investment, no research to finance, no responsibility to the art. He can make a thing and sell it. If he makes a dollar profit it belongs to him until the courts take it away from him, which can only happen after a long litigation. The great concern which has made all this development possible, which has

[4] Arthur H. Lynch, "The March of Radio," *Radio Broadcast,* Vol. 2, No. 5, pages 355–356, March 1923.

spent millions in clearing the road for American radio, has to earn something on what it spent in acquiring that pathway. Enforcement of its patent rights with the Federal Courts will help it to earn that something. If its rights are not as broad as it believes them to be, the courts will say so. In its efforts to test its rights and find out just what they really are and to enforce them the Radio Corporation should have the sympathy of everyone who really wishes the good of the radio art.[5]

The *Radio Broadcast* editor's reaction to this point of view was reflected some months later in the March 1924 issue, which presented figures to show the tremendous growth of the radio industry as evidenced by reported R.C.A. radio tube sales. He accepted the idea that developmental costs merit reimbursement, but raised pertinent questions of "how much" and "how long," in the following fashion:

> In 1921 the Radio Corporation furnished on order 112,500 tubes; in 1922, 1,583,021, and in 1923, at the rate given in the report, the sale of tubes will reach 4,000,000. This means that the radio public has invested about $24,000,000 in tubes alone, in a single year. We do not question these figures. But—isn't it time that more of the "development cost" of the tube was charged off and the price adjusted more in accordance with the actual manufacturing cost?[6]

R.C.A. won the Grebe case, which had precipitated this public airing of its corporate policies. The price of Radiotron tubes was scaled down from a high of $6.00 during 1923 to $5.00 in January 1924, and then $4.00 in August 1924. In 1925 the price dropped further to $3.00 in February and then to $2.50 in August. Although its earnings were very satisfactory during this period, R.C.A.'s need for capital funds to finance expansion was so great that it did not pay dividends on its common stock and paid but one dividend on its preferred stock, during this entire period. It should be recalled that the stockholders of R.C.A. were primarily other corporations, and not individuals, making this policy of deferment of dividend payments more feasible.

SUCCESSION IN R.C.A. TOP MANAGEMENT

As early as February 1922, when the budding radio boom altered drastically the nature of R.C.A.'s corporate problems, R.C.A. President Nally, who had been vice-president and general manager of American Marconi, indicated to Board Chairman Young that mass sales problems were a bit out of his line. He wished to be relieved of his chief executive's post so that he might continue with technical work in the field of communications. Mr. Young then faced the highly important task of initiating a search for a suitable successor to assume the post of chief executive. He realized that success or failure in filling this office might make or break the entire organization. At the outset, Young formulated in his own mind and communicated to Nally the qualifications he thought must be possessed by a man who would assume the responsibilities of chief executive of R.C.A. These specifications were presented as follows:

> 1st. He should be well known both nationally and internationally and he should have made such a place for himself as would enable him to speak with authority either to a foreign Government or to our own Government.
>
> 2nd. He should not have been previously identified with politics because that would mean party alignment and partisan reaction.
>
> 3rd. He should not have been identified with Wall Street and the money interests because it is important that the American people should accept the Radio Corporation as an organization for service to American interests both at home and abroad rather than as an organization primarily to make a profit for Wall Street interests.
>
> 4th. He should have had administrative experience and if possible business experience.

[5] James G. Harbord, "As the Radio Corporation Sees the Patent Situation," *Radio Broadcast,* Vol. 3, No. 1, pages 4–5, May 1923.

[6] Arthur H. Lynch, "The March of Radio," *Radio Broadcast,* Vol. 4, No. 5, page 373, March 1924

to directors and officers selected from G.E., Westinghouse, and R.C.A., Sarnoff proposed that this quasi-public broadcasting company have outside directors who were prominent in national or civic affairs. In advocating a nonprofit, public-service broadcasting corporation in 1922, David Sarnoff did overlook the full potentialities of revenue from radio advertising. The Sarnoff plan was laid aside in 1922, as the radio boom was in full swing, and R.C.A. was too occupied in meeting immediate demands for equipment to consider long-range, broadcasting-service experiments.

In December 1925, against a background of declining profits from radio-set sales and mounting deficits from radio-station operation, the board of directors of R.C.A. instructed Harbord, president of R.C.A., to send duplicate letters of invitation to the presidents of G.E. and Westinghouse. These letters asked that two representatives of each company be named to serve as members of a joint committee with R.C.A. to consider "the economics of a national broadcasting system as a whole which would take over the existing stations and broadcasting business of the American Telephone & Telegraph Company as well as the stations of the General Electric and Westinghouse companies and the Radio Corporation of America, and merge them into a national unit . . ." This assignment involved assembly by the joint committee of figures that showed the cost of operating the broadcasting stations of the interested companies. Consideration of the feasibility of certain proposed rates for wire service quoted by the telephone and telegraph companies was also part of the task.

After two months of committee and subcommittee discussion, often deadlocked, a report of this general committee on broadcasting was presented by Sarnoff to R.C.A. directors. The board unanimously accepted the recommendations and empowered the executive officers to undertake negotiations with officials of the telephone company for a definite contract that should be submitted to the R.C.A. board for final action.

Six more months were consumed in the completion of preliminary work. As chairman of the board of R.C.A., Young undertook the vital task of organizing the new corporation, both from a legal point of view and from a personnel point of view. Once again the task of selecting a chief executive was a central problem. Young believed that no executive then connected with radio could be chosen without arousing jealousies above and beyond normal disappointments. Yet the candidate had to know the problems faced by great public-service industries and had to have an established reputation in some such associated field. Mr. Merlin H. Aylesworth, a lawyer and former chairman of the Colorado Public Utilities Commission, who had subsequently entered the public utilities field and was currently managing director of the National Electric Light Association, was Young's choice for the important post.

A second staff problem of great magnitude arose over the selection of a general manager for the newly named "National Broadcasting Company." By the nature of his assignment, the general manager of this company had to possess an extensive background within the radio broadcasting field. The two leading candidates were enemies of long standing who headed rival radio stations in New York City. These men tended to cancel each other out as candidates. A second-line executive from one of these rival stations, George F. McClelland of American Telephone's WEAF organization, was a young man of outstanding promise. He was promptly selected for the position by Young and Harbord. When asked if he would accept this very considerable advancement, McClelland's answer was not an immediate and unqualified "yes." Harbord has recorded his response as follows:

> He asked what was to be our aim—whether purely a money-making affair, or whether we aim to perform a big public service to which the income was somewhat incidental. I reassured him on this point, telling him we had the ambition to give a splendid public service,

not unconscious of the fact, however, that if we did, it would reflect itself to us in profits by that company and increased sales of radio apparatus by our own. He accepted the position without any understanding as to salary.[9]

The National Broadcasting Company was incorporated in Delaware on September 9, 1926. A general statement was issued shortly to the press, under signatures of Young and Harbord, telling of the plans and purposes of the new organization. The public relations aspects of this radio venture were handled with the greatest of care. The new network held a coming-out party in the Grand Ballroom of the Waldorf-Astoria in New York City and this broadcast constituted perhaps the finest program to come over the air waves to that date. More than a thousand selected guests formed the visual part of the audience. Young undertook personally to line up a distinguished "advisory council of radio," made up of persons eminent in educational, public, and social life, who might give the new organization the benefit of their experiences as civic leaders. Frank A. Arnold, a former magazine publisher and advertising executive, who had more recently become a lecturer at the Harvard Graduate School of Business Administration, was engaged as an "ambassador-at-large" to acquaint the American business world with the advantages of radio advertising and to break down possible sales resistance.

Within a relatively few months, N.B.C. had set up a "red network," a "blue network," and a "Pacific Coast network" for the transmission of its first-quality sponsored programs. Fifty stations in all parts of the United States could be linked together at will to carry important events and special messages, as well as regular entertainment, to a large proportion of the American nation. Although the National Broadcasting Company experienced a deficit of close to $.5 million during 1927, the first year of its development, it forged ahead on schedule during 1928 and ended up the year with a net profit of $427,000 on a gross income of $10 million. During the first few months of 1929, all trace of the initial subsidy by R.C.A. and the associated sponsor companies was wiped out.

Meanwhile in 1927, Congress passed the Radio Act setting up a Federal Radio Commission to control licenses of radio stations and to promote the interest of the general public in radio broadcasting. Although the passage of this act proved to be but a first small step along the path to effective regulation of radio, it at least did point toward better things. This reversal of the trend toward chaos, which had prevailed during the first six years of commercial broadcasting, had a stimulating effect upon the industry, just as did the establishment of N.B.C.

R.C.A. MERGES WITH VICTOR

Throughout this period of rapid change in the young but booming radio industry, R.C.A. struggled along under severe handicap in the vital matter of bringing quickly to market new models of improved design. The reason for this handicap, it will be recalled, was a decision made in 1919, prior to the birth of the modern radio industry, that R.C.A. should purchase and sell radio apparatus manufactured on a 60-40 basis by G.E. and Westinghouse and should not establish manufacturing facilities of its own. At this time, R.C.A.'s primary objectives were thought to be the establishment of a national communications system and provision of a market for heavy items of equipment, such as the Alexanderson alternator. From the outset of the radio boom in 1921–22, Sarnoff became convinced by bitter experience that R.C.A. would need unified manufacturing and selling facilities of its own, if it were to compete successfully with rival producers of radio sets. In this field, last-minute improvements often became key selling points. The reluctance of

[9] Gleason L. Archer, *Big Business and Radio*, page 281. New York: The American Historical Society, Inc., 1939.

G.E. and Westinghouse to change their agreements, plus the heavy outlays that would be required to establish new manufacturing facilities of the type needed for effective operations, had forestalled actual moves toward the establishment of R.C.A. manufacturing facilities.

In the spring of 1928, just as top G.E. and Westinghouse officials were becoming convinced by the march of events that the Sarnoff objections to the status quo had merit, an opportunity arose for the Radio Corporation to merge with the world-famous Victor Talking Machine Company on advantageous terms. After struggling vainly to stem the tide toward radio from 1921 to 1925, the Victor executives had made belated efforts to adjust to the realities of the situation and arranged to purchase R.C.A. radio sets for combination with Victor phonographs to form a single unit. This partial step did not end the company's financial difficulties. By 1928, the Victor executives concluded that they must have license rights to manufacture radios and combination radio-phonograph sets or else sell out to a radio-manufacturing company.

The opportunity to merge with Victor was intriguing to R.C.A. for several reasons. The Victor "listening dog" trademark had been known throughout the world for a generation as the mark of quality in its field. Victor artists and their recordings were equally famed. This organization would fit in well with the plans of newly-organized N.B.C. which called for top-flight artistic talent. At the manufacturing level, the Victor purchase offered precisely the opportunity Sarnoff had been seeking for half a decade. The physical facilities of the Victor Company, which were employed in the manufacture of high quality cabinets for phonographs, could be utilized under R.C.A. for manufacture of radio sets, tubes, and auxiliary radio appliances. Thus, unification of manufacturing and sales by the Radio Corporation could be achieved at a single stroke.

In December of 1928, Young and Sarnoff completed negotiations with the bankers for the Victor Company covering the proposed merger of this $69 million organization with R.C.A., subject to the approval of the R.C.A. board of directors and the Victor stockholders. Seven-eighths or more of the latter group would have to deposit their Victor common stock with the bankers in exchange for R.C.A. common stock within a two-months' period in order to effect the merger. Both groups approved the proposal during the absence of Young and Sarnoff who traveled to Europe in the spring of 1929 on government service in connection with German reparations.

Initially, G.E. and Westinghouse advanced $32 million, on the credit of R.C.A., for the purpose of retiring the Victor preferred stock and of improving and altering the Victor factories as a step in a partial unification plan. Upon their return from Europe, however, Young and Sarnoff pressed for complete unification in the manufacturing, engineering, and selling of R.C.A. products. The formation of the R.C.A.-Victor Company, Incorporated, on December 26, 1929, in Maryland, opened the way for the execution of their new comprehensive organization plan.

In order to place the dynamic young Sarnoff in the chief executive's post to carry out the unification program, Young resigned from his own position as chairman of the board of R.C.A. and nominated Harbord for election to that senior position, after seven years of service as president. Sarnoff, the 39-year-old executive vice-president, was then elected president of R.C.A. by unanimous action of the board. Sarnoff immediately arranged for G.E. and Westinghouse to transfer their stockholdings in six R.C.A. subsidiary companies to R.C.A. itself, in return for equivalent common stock in the parent company. In effect, this move involved the transfer by G.E. and Westinghouse of factories and machinery, of valuable patents and royalty rights, and of direct claims for repayment of the $32 million advance in return for shares of stock, the value

of which depended upon the future solvency and business success of R.C.A.

DEPRESSION AND ANTITRUST LITIGATION

As far back as the spring of 1923, when R.C.A. sued the Grebe Company for patent infringement, the Federal government began to gather evidence for antitrust action against R.C.A. Federal Trade Commission investigators appeared at the New York offices of R.C.A. to inspect books and records and to question corporate officers. The menace of antitrust litigation hung over the R.C.A. organization throughout that year.

In December 1923, F.T.C. published a 347-page report setting forth in detail the cross-licensing agreements, the stock distribution pattern, and certain secret understandings arrived at during the early days of the corporation's existence. In January 1924, the commission filed a complaint against the company and its sponsoring companies, charging them with the use of unfair methods of competition. Fully 20 months elapsed before formal hearings convened to gather testimony on the case. Thirty-eight months after the hearings commenced, the Commission reviewed the evidence, which included more than 4,000 pages of testimony. F.T.C. announced in December 1928 that the complaint against R.C.A. and its seven sponsoring companies would be dismissed without action.

A year and a half later, when R.C.A. achieved unification through merger with Victor and through agreement with G.E. and Westinghouse as detailed above, the government reopened the entire matter by filing an antitrust suit against R.C.A., General Electric, Westinghouse, and the American Telephone and Telegraph Company. The companies were charged with illegal restriction of interstate and foreign commerce in radio communication and radio apparatus. Both the original cross-licensing agreements of 1919–21 and the recent unification agreement, in which G.E. and Westinghouse transferred manufacturing licenses and facilities to R.C.A. in return for R.C.A. stock, were now alleged to be contracts in unlawful restraint of competition in the radio business.

The defendant companies denied unlawful conduct. They asserted that the cross-licensing agreements for exchange of patent rights did not restrain trade. On the contrary, according to the companies, the agreements were necessary to put an end to a patent stalemate in which no single company possessed enough patents of its own to produce efficient radio equipment. The companies stated that the joint use of key patents under the licensing agreements actually stimulated competition by enabling a number of companies to produce radio apparatus.

Upon consultation with the Department of Justice, attorneys for the defending companies learned of the government's objectives in the case. The government wished to require G.E. and Westinghouse to dispose of their R.C.A. stockholdings, just as the American Telephone & Telegraph Company had done several years earlier. They also wanted R.C.A. to offer licenses to G.E., Westinghouse, American Tel, and Western Electric that would enable each parent corporation to compete with R.C.A. in the radio field.

Sarnoff regarded these requirements as a serious threat to the continued existence of his company. R.C.A. was still in process of working out production, marketing, financial, and organizational aspects of unification of manufacturing and sales through merger with Victor. The Great Depression was well into its second year with no sign of let-up. If competition were now to increase abruptly, the financial impact might well prove fatal to R.C.A.

Sarnoff prepared his arguments for presentation to the board of directors with the utmost of care. The large majority of R.C.A. directors were also top management officials in General Electric and in Westinghouse. Now that separation of R.C.A. from its parents was an issue, these officials were placed in a delicate position. They had dual re-

sponsibility to two organizations whose interests now tended to diverge.

An early settlement of the government suit was also a matter of primary concern to Sarnoff. The company had been placed in an unfavorable light in its public relations by the mere announcement of the government charges. Its publicity program had to take on a defensive tone and devote itself to this topic rather than to other more constructive developments. Moreover, other competing organizations were being encouraged by the government suit to bring their own private suits for damages against R.C.A. Individual congressmen also were alert to the vote-getting possibilities of speeches denouncing the "iniquitous radio trust." Attacks upon R.C.A. began to develop upon a number of long-dormant fronts. In addition to inflicting serious damage upon the company directly, these forces exerted a drag upon operations of the company indirectly by draining the energies of R.C.A. officers who might otherwise have guided constructive projects planned for the newly-unified corporation.

After holding a series of conferences to plan joint policy, officials of the defending companies decided not to accept the government conditions for settlement of the complaint. R.C.A. Board Chairman Young set forth the position of the Radio Group in a letter to the attorney general in October of 1931. He indicated that R.C.A. had taken a number of steps to meet government objections. These matters involved R.C.A.'s relations with General Motors Corporation and the United Fruit Company. The major specifications in the government settlement, calling for 1) an "open-patent-pool" instead of "exclusive rights" for R.C.A. and 2) restoration of competition among members of the Radio Group, were opposed by Young in the following terms:

> As you are aware, in acquiring exclusive rights under patents of others of the defendants, the Radio Corporation also received tangible properties and many millions in cash. To attempt to make the readjustment at this time, however, when the hope of improved industrial conditions not only remains unrealized but when the country is in an unprecedented economic and industrial crisis, would be to court financial and industrial disaster.
>
> Throughout the country large radio plants owned by competing manufacturers stand idle today because of overproduction resulting from ruinous competition. . . . Radio equipment on the market is in excess of public demand. . . . Thousands of men and women, the large majority of whom might have remained employed if stable conditions existed, are out of work today, and hundreds of thousands of stockholders today find their investments depreciated, not by restraint of competition but because of competition so great as to have demoralized prices and to have made profitable operation largely impossible.
>
> The Radio Corporation has many large competitors. It has always seemed to me that in view of the relatively small percentage of the total radio business which is done by the Radio Corporation (less than 20% in receiving sets and less than 40% in tubes), and the intense competition in the radio field, there was no reason why the General Electric and Westinghouse Companies should not carry on their radio business jointly through the Radio Corporation. If the Radio Corporation were not in existence . . . it seems to me clear that those two companies might today without possible objection under the law, combine their radio businesses into one corporation. If that be true, I am unable to see why there should be a continued effort to break up such unification as already exists.[10]

Throughout the period of these negotiations R.C.A. was engaged in a severe program of retrenchment. As economic conditions deteriorated throughout the country after the 1929 crash, consumer demand for radios fell off sharply. Intense competition within the industry caused prices to drop off repeatedly, to establish a series of all-time lows. Soon distress merchandise began to set the tone for the market. The radio-broadcasting and the motion-picture industries, in which R.C.A. subsidiaries were

[10] *Ibid.*, pages 358–9.

engaged, also were hard hit as the depression wore on. Gross income of R.C.A. and its subsidiaries, which had risen steadily for a decade, dropped off 25 per cent in 1930 from its peak figure of $182 million. Further declines of 26 per cent in 1931 and 34 per cent in 1932 reduced R.C.A. income for 1932 to but 37 per cent of the 1929 peak year. A net loss of more than a million dollars was suffered by the corporation in that trough year of the depression. The loss was kept down to this figure only by sweeping economy measures. For instance, the total R.C.A. salary payrolls for 1932 were reduced to 50 per cent of the 1930 figures.

In reporting company activities to his board of directors in 1932, Sarnoff made the following statement:

> The outstanding fact is that, despite the many difficulties, the Radio Corporation of America has survived the overwhelming tide of depression which has engulfed many industries. It has vastly improved its position in many fields and, through thorough co-ordination of policies and activities, it has been able to translate unification at Camden into a well-knit and efficient organization, turning out the best products at the lowest prices in the history of the radio industry. . . . Also during this period we have amicably settled and adjusted many pending suits and greatly improved the position of our company in the field of public relations. . . . The Radio Corporation of America has been a self-contained unit only during the past two years, and while it inherited the commitments of the preceding ten years, it was obliged to consolidate, coordinate, build and rebuild during a period of economic and financial depression which has seriously shaken the world's business and economic structure.[11]

Although Young had written to the attorney general that the government proposals for separation of R.C.A. and its parent companies were not acceptable, he and other leading officials of the companies concerned realized that the issue was not to be disposed of in such easy fashion. Throughout the fall of 1932, Sarnoff met with Swope of General Electric and Robertson of Westinghouse to seek agreement as to possible programs of action, which would satisfy the government and yet protect the interests of the stockholders of the several participating companies. Young, chairman of the boards of both G.E. and R.C.A., was recognized as a neutral figure by all parties concerned. He was frequently consulted by the three presidents and by other R.C.A. directors in questions involving basic policy.

While maintaining that the corporations had not violated antitrust laws, the Radio Group officials, nevertheless, were becoming increasingly anxious to avoid the unfavorable publicity and uncertain outcome of a public trial. They were particularly concerned lest, through their refusal to compromise, a sensational R.C.A. trial become an issue in the presidential elections which faced the Hoover administration that fall. The prolonged economic depression had already discredited both business and the administration sufficiently in the public eye without need of further aggravation, in the opinion of these business leaders. Actions that had been taken in good faith in a different context might not receive a sympathetic hearing in a public trial held during a great depression in which millions of families were in a state of poverty.

The pressure upon the corporation negotiators increased day by day during the late fall, as the date set for the R.C.A. trial approached with but mild prospect for agreement either among the defending companies or between the companies and the government. On a typical day, Sarnoff would receive detailed reports on new developments from a half dozen of his subordinates who were working on particular aspects of the highly technical negotiation subjects. Not only were legal matters involved throughout the controversy, but the field in question was that of patent law, a highly esoteric field even for lawyers. President Sarnoff would form judgments, with

[11] *Ibid.*, pages 362–3.

the aid of his managerial staff, as to possible implications of various legal proposals for future business operations of the negotiating companies. He would then enter into all-afternoon conferences with presidents Swope and Robertson in which the day's developments would be explained and argued. Other members of the R.C.A. board would then have to be canvassed on the decisions tentatively reached. At the close of each day, plans had to be made for the next day's conferences and longer range strategy had to be reviewed. Other top policy questions arising from R.C.A.'s operations under the unification program, which was being adhered to despite severe buffeting from a cataclysmic depression, could not be ignored by R.C.A.'s president during these weeks of gruelling negotiations.

After obtaining preliminary understandings acceptable to the boards of R.C.A., G.E., and Westinghouse and to the negotiators for the Department of Justice, Sarnoff scheduled an emergency conference of all parties on Sunday, November 13, 1932, just two days before the date set for the trial. The meeting lasted all day and continued far into the night. The principals finally reached general agreement on the basis for a settlement.

A stipulation (*i.e.*, agreement) was signed by Attorney General William D. Mitchell and by the counsel for the three corporate groups, R.C.A., G.E., and Westinghouse. It stated that the defendants, "without conceding or admitting the truth of the facts or matters alleged by the petitioner [U. S. government], and without any findings of fact," agreed to a "consent decree." The decree provided for dismissal of the lawsuit against the companies in light of various agreements entered into by the companies to satisfy the Department of Justice.

G.E. and Westinghouse agreed to dispose of their holdings of R.C.A. common stock by distributing shares proportionally among holders of their own common stock. The two corporations were, of course, forbidden to acquire R.C.A. stock in the future. All officials of G.E. and Westinghouse were required to resign from the board of R.C.A. or its subsidiaries. This provision was also to apply to future cases. The companies were restrained from making exclusive any license for patents covered by the cross-licensing agreements of 1919 21 or by the unification agreement of 1930. The companies were forbidden to enter into new understandings in restraint of commerce or in violation of antitrust laws.

In a "basic agreement" among themselves, R.C.A., G.E., and Westinghouse spelled out the terms under which the required adjustments of assets, rights, and indebtedness were to be made. R.C.A. issued several millions of dollars' worth of debenture bonds to G.E. and Westinghouse to replace a portion of their former common stockholdings. These bonds did not, of course, involve the voice in control of the issuing company to which the government had objected in the case of the common stock.

R.C.A. emerged from the ordeal of the consent decree proceedings in a condition which may be termed remarkably strong in the light of all the circumstances. Far from losing its recent gains from the unification agreement with G.E. and Westinghouse, R.C.A. gained full independence from these senior corporations. It obtained cancellation of a significant portion of its debts to the parent companies, and gained additional patent concessions as well. As a result of the unification and separation agreements, it obtained the right to manufacture and sell radio equipment and parts under Radio Group patents. It could grant licenses to others and retain all royalties received. Indeed, G.E. and Westinghouse were now obliged to pay royalties to R.C.A. on all radio equipment sold by them under Radio Group patents. This situation still prevailed at midcentury, as both G.E. and Westinghouse competed in the radio-television field with their former charge, R.C.A.

POLITICIANS JOUST WITH "RADIO TRUST"

Although R.C.A. sales and profits rose steadily during the first half decade of the

New Deal's rise to power, the Corporation's standing in the public eye remained at low ebb. It continued to be "good politics" to attack the "radio trust." The names and connections of the men serving on the R.C.A. board lent themselves readily to manipulation in an era in which business generally was serving out a sentence for past excesses. A speech by Representative W. D. McFarlane of Texas before the House on August 10, 1937, entitled "Radio Monopoly Must Be Curbed" is typical of the "guilt by association" psychology of the times. It read, in part, as follows:

> An analysis of the board of directors of the Radio Corporation of America . . . [reveals that] . . . General James G. Harbord is a Morgan representative on the board of R.C.A. and is also a director of the Morgan-controlled Bankers Trust Co. Newton D. Baker is legal adviser to many of the Morgan-controlled utility companies. Cornelius Bliss is a member of the firm of Bliss Fabyan Co., a Wall Street firm, and is also a director of the Morgan Bankers Trust Co. The elder Bliss was for many years treasurer of the Republican National Comittee. Arthur E. Braun, of Pittsburgh, is president of the Mellon Farmers Depositors National Bank, one of whose directors is A. M. Robertson, chairman of the Westinghouse Co. . . . Bertram Cutler is listed in Poor's Register of Directors as being connected with John D. Rockefeller interests. Edwin Harden, the brother-in-law of Frank Vanderlip, is a member of Weeks & Harden, a Wall Street firm. Dewitt Millhauser is a partner in Speyer & Co., underwriters of utility issues. Frederick Strauss represents J. W. Seligman & Co., a Wall Street firm. James R. Sheffield is a corporation lawyer, a former president of the Union League Club and the National Republican Club. As a former Ambassador to Mexico he used his political connections with the Hoover-Coolidge State Department to get concessions for R.C.A. in South America. . . .
>
> At this point I should like to say something about the Radio Trust formed by R.C.A., General Electric, Westinghouse, A.T.&.T., *et al.*, and which was supposedly dissolved by the Government in the notorious consent decree of 1932. . . . When the Government seemed to be pressing suit against the Radio Trust, the cost of radio sets dropped to $10 and below. This permitted millions of homes to enjoy the benefits of radio, and millions of people were able to listen to the issues of the day aired over the wave lengths. A new note in democracy was being struck. However, just as soon as the Hoover administration and the Radio Trust entered into the now infamous consent decree, the price of radios began to rise again until now $30 and up is the price for a decent radio.
>
> In the supposed dissolution of the Radio Trust by the consent decree in 1932, it was proven that R.C.A. possessed such a monopoly. There is evidence to show that despite the consent decree, this monopoly still persists in violation of the antitrust laws. Yet testimony before the House Appropriations Committee shows that broadcasting licenses of R.C.A. are renewed every 6 months without ever having the question of the apparatus monopoly or public interest raised. I sincerely believe that the issue of re-examining the effects of the consent decree is resting squarely on the shoulders of Congress. Shall we face the issue or evade it as has been the custom in the past? . . . This communications monopoly is becoming more powerful all the time. Until now many Members dare not speak their sentiments against it, lest they be opposed by it for re-election. . . .[12]

The sources of information utilized by Congressman McFarlane and the specific incidents in his career that led to this political assault on R.C.A. need not be conjectured upon here. It is significant to note, however, that McFarlane and a number of his colleagues felt that the political capital to be gained from these detailed attacks upon the so-called "Radio Trust" were worth the considerable research effort involved. It should be remembered that the Federal Communications Commission and other government regulatory bodies, which had dealings with R.C.A. in day-to-day business matters, were also subject to pressures generated by individuals and groups

[12] F. C. Waldrop and J. Borkin, *Television, A Struggle for Power*, pages 223–8. New York: W. Morrow & Co., 1938.

bitterly opposed to the very existence of the corporation. The cumulative influence of such persons was not insignificant during this period.

STRUGGLE FOR PRIMACY IN PREWAR TELEVISION

R.C.A. is, without question, a vigorous competitor, even though its influence is not as all-pervading as politically-minded opponents depict it to be. A controversy arose between the F.C.C. and R.C.A. in 1940 over the interpretation of commission rules permitting "restricted commercialization" in the field of television. When R.C.A. cut receiver prices by one-third and sought through newspaper advertising to promote volume sales to the public, the Commission declared the company actions to be at variance with the intent of the commission's report. Thereupon the commission suspended its new rules, and caused the industry to revert to a purely experimental basis.

Inasmuch as 1940 was an election year, this controversy between the F.C.C. and R.C.A. was used as ammunition by both major political parties. Antigovernment factions labeled the F.C.C. action a "usurpation of rights" by a powerful "bureaucracy." Antibusiness forces replied that this was just another instance of "short-sighted self-seeking" by the "iniquitous radio trust."

A basic issue was, nevertheless, involved in this controversy. It concerned the place to be occupied by the TV industry, and, beyond it, by the entire communications industry, in our mixed economy. Was TV to develop in the sector of our economy that featured relatively free and unrestricted individualistic competition, or was it to be placed in the sector that featured planned, standardized cooperation by licensed companies under supervision of a government regulatory agency?

As TV, by its nature, competes for space on the already crowded radio wave spectrum, it must be subject to at least the minimum amount of regulation that experience has shown to be necessary to avoid chaos on the air waves. Moreover, TV calls for more supervision than does radio itself, in view of the fact that it is a "lock and key" mode of communication. By that phrase is meant that TV transmission and reception are bound together in a mechanically rigid way. If a TV performance is scanned at the rate of 525 lines of definition and 30 complete pictures a second with FM sound transmission, then no receiver set can translate the signals back into intelligible form except one especially designed for reception of a 525 line, 30 frame, FM sound broadcast. A receiver slightly different in any of these particulars would not function for this transmission system. Technical improvements in transmission and reception thus have not anywhere near the scope for ready adoption in TV as they have in radio. The practical necessity for adoption of one set of TV standards for the entire nation entails a large element of monopoly. Such a monopoly can be tolerated under our competitive economic system only if it is closely regulated by a public body.

In the final analysis, no TV company seriously questioned the desirability of having the F.C.C. fix transmission standards for television. Sarnoff defended his company's action in promoting the sale of commercial TV-receiver sets in 1940 before the F.C.C. promulgated standards, but concluded by stating:

> I am amazed at the action of the Commission. We have spent nearly ten million dollars in developing television and in trying to create a new art and a new industry. We thought that we were proceeding exactly in accordance with the order on this subject recently adopted by the Commission.[13]

President Allen B. Du Mont of the Du Mont Laboratories accused R.C.A. of acting in its own short-run interests at the expense of the TV industry's future. He revealed that his own company was experimenting with

[13] R. W. Hubbell, *4000 Years of Television,* page 148. New York: G. P. Putnam's Sons, 1942.

superior 800-line transmission, whereas R.C.A. wished to standardize upon the 441-line system, which it had been using in recent experimental sending. "Certain people," stated Du Mont, "wish to standardize television at 441 lines because it fits into their patent situation." The Philco Company also reasoned along the same lines in protesting R.C.A. action in hearings held by the Federal Communications Commission.[14] R.C.A. was possessor of the critical 441-line TV patents. The patent situation for higher definition systems was still wide open.

The commission report, following its 1940 hearings, stated a belief that the intensive promotional campaign which had been launched by R.C.A. would tend to freeze TV standards to the current R.C.A. system. The F.C.C. also asserted that R.C.A. advertising was misleading in that it emphasized "regular program service" in public announcements, but failed to mention the experimental character of TV broadcasting. It failed to point out that only one station was in operation in New York City, and that it was operating irregularly for two or three hours a day and only on certain days of the week. This advertising further neglected to remind the public that future stations might possibly employ alternative systems that might not permit reception by the early commercial sets placed on the market by R.C.A.

The commission did not object to the above omissions on grounds of fair trade practices, but rather in the belief that they might have a distorting effect upon the setting of future TV-broadcasting standards. If large numbers of sets were sold in routine fashion to the public, a great outcry might result from any later change in standards that would advance the industry, but render existing sets useless. Such a public outcry would, in practice, deprive the F.C.C. of its statutory power to fix transmission standards. The commission, therefore, refrained from setting standards until additional experimentation could be carried out. It withdrew the privilege of limited commercial broadcasting as a result of R.C.A.'s alleged abuse of the practice. It will be recalled that, when standards were finally adopted by the commission a year later, lines of definition were raised from 441 to 525. An improved form of "synchronization" was adopted to keep pictures "in frame" despite adverse static conditions. All sound was broadcast by FM instead of AM, and TV-broadcasting channels were shifted. Set manufacturers found themselves obliged to rebuild all sets in the hands of the public.

R.C.A. DURING WORLD WAR II

As the trend of events in World War II began to point increasingly toward eventual American involvement, the attention of R.C.A. management began to shift, proportionately, from the drive for commercial TV toward the preparation for national defense. As the defense boom progressed, R.C.A. management became heavily engaged in the planning of facility expansion and of facility conversion for military production. Under these conditions, the company's TV program became both less important to the short-run welfare of the firm and less appropriate as a plan for immediate execution.

As far back as October 1940, R.C.A. directors planned the expansion of manufacturing facilities to meet the increased demands of national defense. At that time, it contracted with a number of leading banks for a credit of $15 million to finance defense expansion needs. By the spring of 1941, the planned physical expansion was well under way.[15] Sarnoff reported to company shareholders in February 1941 that R.C.A. "activities in the interests of national defense—particularly in research, engineering, communications, and manufacturing—have been greatly intensified and expanded."[16] National defense was given the right-of-way in

[14] *Ibid.*, pages 148–9.
[15] *New York Times*, April 29, 1941, 31:4.
[16] *Ibid.*, February 27, 1941, 29:5.

every phase of R.C.A. activities throughout 1941. In cooperation with the desires of the government to hasten production by mobilizing smaller industrial organizations, as well as large concerns, R.C.A. developed relationships with more than a hundred subcontractors, who were asked to share in the larger contracts. On Pearl Harbor Day, the company's unfilled orders were 80 per cent defense and but 20 per cent commercial.[17] During the first year of the shooting war, R.C.A.'s bank loans increased fully $60 million in connection with war work. Working capital needs climbed from $37 million to $104 million, a 180 per cent rise, in response to unprecedented war demands on the radio industry.

Not all of this expansion occurred on the production line itself. An electronics research center, known as R.C.A. Laboratories, was constructed at Princeton, New Jersey, in 1941–42 at a cost of $2 million. The center was designed both "to promote the growth of radio as an art and industry" and "to meet the expanding demands of national defense." R.C.A. Laboratories was also "planned to facilitate the creation and development of new radio products and services which will provide new business and new employment for the postwar period," stated Sarnoff in March 1941, nine months before Pearl Harbor. This 300-acre Princeton site became the headquarters for all research and original development work of R.C.A. E. W. Engstrom was named director of the laboratories. Dr. V. K. Zworykin, R.C.A.'s prolific inventor in the TV field, was assigned to Princeton as associate director.

A thousand invited guests, including many noted scientists and engineers in the communications field, witnessed the cornerstone laying of R.C.A. Laboratories in November 1941. Sarnoff, speaking over a 5,000 mile channel by radio and wire from the liner Matsonia, en route from Honolulu to Los Angeles, dramatized the occasion in words, as well as through his unique location, as follows:

> If these laboratories were being built in a world free from voices of hate and threats of aggression, it would have but a single purpose: to improve existing services and products and to create new ones. That purpose holds good and will be the constant objective. But a more immediate and pressing goal confronts us. We cannot build for peace until we first insure the conditions that make peace possible. We therefore pledge the unremitting efforts of these laboratories to the national defense of the United States . . . that the cornerstone we lay at Princeton today shall help support that great cornerstone which went into the building of the nation—freedom of men and women of America.[18]



Figure 4-2: David Sarnoff Research Center of RCA at Princeton, New Jersey. (*Radio Corporation of America*)

[Discussion of many other major activities carried on by R.C.A. during and following World War II must be omitted from this case in the interests of conserving space and time.]

POST-WAR TV AN R.C.A. TEST PATTERN

The prewar struggle for primacy in commercial TV was renewed with vigor in 1944–45 by R.C.A. and competitor firms, as the Federal Communications Commission held hearings to plan for a postwar expansion of radio spectrum services. F.C.C. Chairman James L. Fly proposed that the

[17] *Ibid.*, December 26, 1941, 15:6.
[18] *Ibid.*, November 16, 1941, 52:1.

entire range of air waves be re-examined to take advantage of remarkable wartime developments. The radio industry set up a Radio Technical Planning Board to study the situation and prepare recommendations concerning AM, FM, TV, and other services, such as facsimile, radar, radiotelephone, mobile industrial radio, radio relay, government-military, emergency services, and amateur stations. With the situation wide open, and so much at stake, the ensuing battles were of momentous proportions.

During the commission's hearings, R.C.A. urged an immediate start for postwar commercial TV in the crowded "very-high" frequencies where the bulk of its prewar experience lay. Du Mont and Philco joined R.C.A. in this stand, which would make possible an early exploitation of their TV experimentation to date. An opposition group within the industry, led by Columbia Broadcasting Company and Zenith Radio, which were interested in C.B.S.'s mechanical color-TV system, wanted TV assigned at this time to its ultimate home in the less crowded "ultra-high" frequencies. In this newly developed portion of the spectrum, there was room for a continuous band of TV channels with little interference with each other or with other services The "ultra-high" also held greater engineering promise for higher-quality pictures as well as for color pictures because there was more space for wider channels.

Unfortunately, the technical problems underlying dependable ultra-high TV broadcasting were still largely unsolved, although the ultimate promise of this region of the spectrum was very great. Wartime regulations still restricted field operations on this problem. The R.C.A. argument to the effect that, if the United States heeded indefinitely the lure of engineering perfection, then commercial TV would never be established seemed particularly cogent to members of the commission. C.B.S.'s accusations that R.C.A. was attempting to restrict the industry to that portion of the spectrum dominated by its prewar patents, investment, and control were largely ignored. The commission did pay lip-service to the warnings of its own engineering staff, however, by including the following statement in its final report in May, 1945:

> The Commission is still of the opinion that there is insufficient spectrum space available below 300 megacycles [in the very-highs] to make possible a truly nationwide and competitive television system. Such a system, if it is to be developed, must find its lodging higher up in the spectrum [the ultra-highs] where more space exists and where color pictures and superior monochrome pictures can be developed through use of wider channels.[19]

While urging the industry to develop techniques of operation in the ultra-high frequencies, in which it set aside a substantial block of experimental channels, the commission squeezed in 12 TV channels in the very-high frequencies for immediate commercial exploitation. R.C.A. had urged the F.C.C. to provide 30 such channels, but accepted this much smaller figure as a basis for opening up the postwar era of commercial TV.

As TV transmission got under way in 1947 under the new system, engineering weaknesses inherent in the commission's stand were demonstrated to layman and engineer alike. Thousands of set owners witnessed interference patterns created by conflicting services and by conflicting stations as between, for example, New York and Baltimore or Cleveland and Detroit. President E. F. McDonald of Zenith took the occasion to write the following public letter of protest to the Federal Communication Commission's new chairman, Charles R. Denny, in June, 1947:

> The interference now plaguing television on this band is trivial compared to what will happen when new stations now authorized take the air. Then there will be intolerable inter-

[19] Lawrence P Lessing, "The Television Freeze." *Fortune,* (Copyright by *Time, Inc.*), Vol. XI, No. 5, page 126, November 1949.

ference between television stations in different cities assigned to identical channels. . . . Two injustices have been done, and both television and FM have been seriously injured, as a result of engineering errors of 1945. Why not face the facts and correct the situation *now*, before further damage is done? You can do so by moving television *immediately* to its ultimate permanent home you have provided in frequencies above 500 mc. . . .[20]

A second round in the postwar TV struggle was precipitated in 1947 when the Commission held hearings on C.B.S.'s proposal to construct immediately commercial stations for transmission of color TV in the ultra-high frequencies. R.C.A. opposed C.B.S. in commission hearings with arguments to the effect that the C.B.S. system was still in the laboratory stage and not field-tested. It further asserted that no such "mechanical" system, employing color disks whirling in synchronization before camera and receiving tubes, could overcome its technical limitations. As a clinching point in its plea for delay, R.C.A. revealed the existence of its own all-electronic color system, which was, however, stated to be technically and economically several years away from commercial application.

The ensuing F.C.C. decision against the color TV proposal of C.B.S. at that time was made doubly unpalatable to that organization six months later when Commission Chairman Denny resigned his government post to become a vice president of R.C.A.'s wholly-owned subsidiary, N.B.C. Following this episode, the Congress passed an act preventing any F.C.C. member from resigning to take a job during his unexpired term of office with firms under F.C.C. jurisdiction. The F.C.C. itself is reported to have opposed enactment of this provision on the grounds that it "would hurt commission morale." [21]

The new chairman, Wayne Coy, inherited in acute form the problems that had been developing during the regimes of his predecessors. He was further handicapped by various rigidities built into the situation by earlier commission commitments. In order to gain time to think and to prevent the situation from deteriorating further, Commissioner Coy invoked a drastic "TV freeze" in the fall of 1948. F.C.C. held up action on all station applications still pending. The difficult situation confronting Coy in 1948 has been described by *Fortune* writer Lawrence P. Lessing as follows:

> Coy inherited an unparalleled situation, even more chaotic than early radio. About the only solid ground was: (1) the present twelve TV channels must be retained, because to do anything else would make obsolete at a stroke all present TV sets; and (2) the ultra-high band must be opened, because there is nowhere else for TV to expand. Beyond this everything was fluid. The clashing very-high stations had to be unscrambled. Distribution of new ultra-high channels had to be worked out. Standards in the new area had to be grappled with. A way had to be found to make the ultra-highs and the very-highs compatible, so that present TV sets could receive new ultra-high stations. One way or another, many present sets would need converters and adapters. . . . One way or another the public would have to pay, while the industry plunged into the forced development of the ultra-highs, which had been "many years away." [22]

While recognizing that it may well be practically impossible to undo blunders of the past—even if the F.C.C. were to render a Solomon's decision—Lessing does point out the need for the industry and the commission to think clearly of the future. The subsequent decision of F.C.C. to adopt C.B.S.'s color TV system, in preference to those under development by R.C.A. and G.E., pointed to a continuation of what has been termed a policy of "hand-to-mouth" planning. The Supreme Court decision at midcentury upholding F.C.C.'s right of de-

[20] *Ibid.*, page 127.
[21] *Ibid*, page 157.
[22] *Ibid.*, page 162.

cision in this matter indicates that the industry may have "pluralism" in color TV, just as it has in split-band black-and-white. The occasion of the Korean crisis was seized upon by the government to hold off commercial color TV for additional months. R.C.A., although a short-run loser in this dramatic color TV struggle, thereby gained time to obtain the benefit of additional laboratory developments.

R.C.A. IN THREE DECADES

R.C.A.'s original charter in 1919 outlined the nature of its business as follows:

To send and receive signals, messages and communications, to create, install and operate a system of communication which may be international, to improve and prosecute the art and business of electric communication, to radiate, receive and utilize electromagnetic waves, to create, manufacture and sell goods and merchandise, and to hold and own patents, patent rights, copyrights and other real and personal property of every description.[23]

The all-inclusive scope that corporation lawyers seek to create for their fledgling organizations was almost literally fulfilled within the communications field and within the electronics field by R.C.A. management. The management's own concept of growth and progress and of its goals are quoted at this point in bringing the chapter to a close. One may then judge for himself how well this corporation has succeeded in living up to the business creed under which it operates.

When the Radio Corporation of America was formed in 1919, it began operations with 457 employees. Today, RCA employs 40,000 . . . the loyalty and skill of its workers have kept pace with the challenges of science and the ever-changing commercial status of radio in its evolution toward continued improvement.

RCA is a symbol of radio progress throughout the world. Dedicated to pioneering in every phase of radio as a science, art, and industry, it has been the mission of RCA to serve the nation in peace and in war. . . .

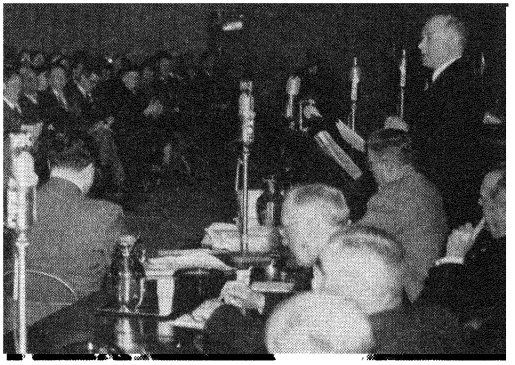


Figure 4–3: General David Sarnoff, Chairman of the Board, addresses annual meeting of RCA stockholders, May 6, 1952. (*Radio Corporation of America*)

In attaining these goals, RCA has achieved new records in service to the public. It has spun an international communications system around the earth, linking more than sixty countries. It gave to America its first nation-wide radio networks, and led in the development of world-wide broadcasting. . . . In industry, thousands of new electron tubes have been developed to perform many tasks that lift man's burdens, enhance his safety and add to his pleasures. Short waves and microwaves have been harnessed for new services that add to America's pre-eminence in radio. The phonograph has been electronized. RCA scientists created the all-electronic system of television, first in black-and-white and then in color. They created shoran and teleran, and pioneered in radar, loran, radio relay stations, FM, radio heat, and the electron microscope.

The monogram RCA on any instrument is a mark of quality and scientific craftsmanship. . . . Behind all RCA products and services stands RCA Laboratories, one of the foremost centers of radio and electronic research in the world. New ideas cultivated in these Laboratories lead to new discoveries and inventions. . . .

Through the vision of its scientists, the talent of its engineers, the confidence of its stockholders, and the ability of its management and employees, the Radio Corporation of America stands upon the threshold of the future, prepared to advance in service to America and the world.[24]

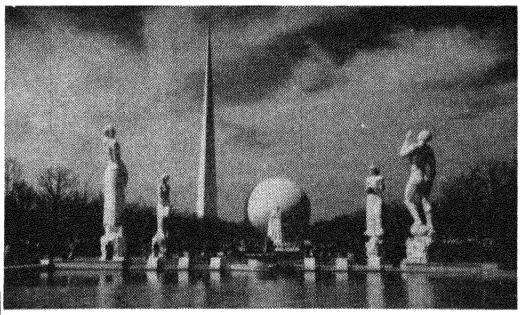
[23] Pamphlet, "RCA, What It Is . . . What It Does," published by the Department of Information, R.C.A. (1948), page 5.

[24] *Ibid*, page 3.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	45–48	Why might it have been unwise for G.E. itself, rather than a newly-formed R.C.A., to have entered the wireless communications field directly in 1919, so as to provide an outlet for utilization of its Alexanderson alternators and other communications equipment?
2	47–50	What prospect for financial success would the newly-formed R.C.A. have had, in your opinion, if it had competed with the American Marconi Company, Westinghouse, and American Tel and Tel, instead of combining forces with them?
3	48–52	What effects did the cross-licensing agreements have upon the ability of the participating companies to meet public demand during the "radio boom" of 1921–22?
4	50–55	a) What were the consequences of the failure of Marconi and R.C.A. directors to develop vigorously Sarnoff's "Radio Music Box" idea and to "tool up" for orderly production and distribution of this proposed new product? b) To what extent could "reasonable" business foresight have been expected to prevent these consequences from developing during the unprecedented "radio boom"?
5	52–55	In your opinion, would "public policy" justify governmental efforts to break up a near-monopoly achieved by a private corporation in a broad field, such as radio, through ownership of key patents?
6	55–57	How might the public have been prepared for the resignation of President Nally in favor of General Harbord, so that this change in R.C.A. top management would be well received by insiders and outsiders alike?
7	57–59	Why might it have been unwise for R.C.A., itself, rather than the newly-formed N.B.C., to have entered the radio-broadcasting network field directly in 1926, so as to provide adequate broadcasting service to stimulate the sale of its radio receivers and equipment?
8	55–59	Evaluate the relative effectiveness of the public relations work of R.C.A. officials in handling the announcement of the formation of N.B.C. in 1926 and in announcing the appointment of General Harbord in 1922.
9	59–61	Why was a merger with the Victor Talking Machine Company intriguing to R.C.A. in 1929, and why, in your opinion, did G.E. and Westinghouse consent to and finance this move?
10	61–64	a) What were the major government charges and objectives in the R.C.A. antitrust suit, which was settled by a "consent decree" in 1932? b) What counterarguments did the Radio Group develop, and what major objectives did it seek in the antitrust case? c) How did the outcome of the antitrust suit under the "consent decree" shape up against the basic objectives of the parties to the issue?
11	64–66	If you were vice president in charge of public relations for R.C.A., what steps would you initiate in order to counter the effect of such public attacks upon the "Radio Trust" as that by Representative McFarlane?
12	66–67	"Although the F.C.C. has broad statutory powers to change communications allocations and standards, it is, in fact, closely limited by the 'dead hand of the past.'" To what extent should the F.C.C. protect the "status quo" as it regulates the communications industry in the

QUESTION NO.	PAGE REFERENCE	QUESTION
		public interest? Illustrate proper and improper protection in the radio-TV field.
13	67–71	As a member of the board of directors of R.C.A. in 1941, what policies would you have advocated with regard to the subcontracting of manufacture of electronic devices for military purposes regarded as having important potential postwar applications as well?
14	67–71	As a director of R.C.A. in 1945, what action would you have advocated in regard to a half-completed, secret, wartime research program designed to perfect a new production process whose subsequent application to peacetime products would make the bulk of R.C.A.'s existing machinery obsolete and enable new competitors to enter the field with a relatively modest capital investment?
15	68–71	As a member of the F.C.C. in 1945, what principles would you have advocated to guide the commission in balancing the desire of the public to have TV available at once against the need to protect the public against excessive obsolescence of TV equipment and against stagnation of technical progress in the television field?
16	45–71	What, in your opinion, are a) the major characteristics, b) the major strengths, and c) the major weaknesses of R.C.A., as evidenced by its growth and development from 1919 to date?



5
The General Economic Setting for the Individual Enterprise[1]

CONSIDERATION OF THE GENERAL economic setting for the individual enterprise should stress economic, political, and social developments in other parts of the world, fully as much as in the United States itself. The worldwide impact of ideas and events should not be underestimated. In many instances, economic ideas flow across national boundaries more readily than do economic goods in the face of man-made and natural barriers. The ideas that dominate our culture today trace their origin in good part to other lands. The great events that set the pattern of development for our political, economic, and social life are generated fully as much without as within our borders. The Industrial Revolution, World War I, the Great Depression, World War II, and the "Cold War" are a few self-evident examples.

A discussion of familiar R.C.A. activities in the opening pages of this chapter will serve to point out certain fundamental processes of economic life that must be carried on under any form of society. Next, we shall identify characteristic features of the private enterprise system under which R.C.A. operates in the United States. The chapter concludes with a discussion of problems of the world economy.

Photo at top of page. The Trylon spire and the Perisphere commanding the Lagoon of Nations symbolize the "world of tomorrow" theme of the 1939 N. Y. World's Fair. (*Brown Brothers*)

FUNDAMENTAL PROCESSES OF ECONOMIC LIFE

Any form of economic system proposed in modern society must produce, efficiently, large quantities of needed goods and services. The central production problem faced by the economy is that of utilizing basic factors of production (namely, land resources, labor, capital, and managerial ability) in such a way that they will satisfy the highest combination of needs felt by members of the group. All means of production are fundamentally scarce when compared to the possible uses to which they can be put. This fact brings into operation, in all economic systems, a common framework of basic economic principles that govern the production of goods and services and their distribution among the members of the economic system in question.

[1] For an excellent discussion of the basic concepts covered in this chapter, see William N. Loucks and J. Weldon Hoot, *Comparative Economic Systems*. New York: Harper & Brothers, 1948.

Referring to our familiar R.C.A. situation, we find that, through more than three decades of endeavor, the company has been able to acquire $.25 billion in assets (items of property, such as real estate, plant, materials, inventories of goods, obligations of others, and cash). There is a definite limit to the pace at which R.C.A. is able to expand these resources, try as it will. If the company reaches the $.5 billion mark in another decade, it will be doing well indeed. Similarly, the rate of growth for our economy as a whole encounters definite limitations, if only those of time and energy required to perform specific tasks. Chapters 1 through 3 of this text illustrate limitations on rate of expansion, as well as potentialities for long-run growth of our American economy.

The human resources of R.C.A. are also closely limited, although the labor and managerial resources of this particular firm are much more expansible than are those of the nation as a whole. R.C.A. started operations in 1919 with 457 employees. Three decades later, the number of workers on its rolls had expanded a hundredfold. Even so, there is a definite limit to the number of persons R.C.A. can attract and maintain as members of its organization at any given time. If R.C.A. were suddenly to increase its workforce from 40,000 to a new high of 80,000 employees, it would destroy the balance of land resources, capital, labor, and managerial ability with which the company has been accustomed to operate. Before R.C.A. could expand its production facilities and its marketing organization to utilize effectively the services of this doubled labor force, the company would either be thrown into bankruptcy or it would be forced to reduce wages to such an extent that its best workers would decide to seek more attractive employment elsewhere.

In contrast to R.C.A.'s expansion in manpower from 1919 to midcentury, the working force of the nation has increased but 60 per cent during the same period. The total labor force of the nation in normal times is largely a function of population growth. In this country, the population increased 50 per cent from R.C.A.'s birth in 1919 to the middle of the century. The birthrate itself has been a matter of concern, one way or the other, under many economic systems. Yet changes in labor supply resulting from even this type of action are narrowly circumscribed and are but slowly brought about.

As the means of production are scarce in any economic system in relation to total potential needs, so the national product of goods and services is also limited, relative to demand. For this reason, items produced are valuable and prices are set upon them. Under a price system, specialized products may be transferred readily from persons who want them less to persons who want them more. Moreover, prices enable the consumer to determine whether or not he wishes to purchase specific items with his limited means. They also allow the producer to determine whether or not his basic costs of production are being covered by the return he receives. In any economy in which consumers are permitted freedom of choice and products are not rationed, the system of prices must operate in such a way as to bring the forces of supply and demand into equilibrium or balance (that is, to arrive at a price at which the quantity demanded is equal to the amount supplied).

Employees of R.C.A. receive their income in the form of money, rather than, say, radios, for money can be exchanged directly and in convenient quantities for the hundreds of items they require in their personal life. Through comparison of prices for various staples and luxuries among the great variety of goods and services placed upon the market, employees decide for themselves the various ways in which they wish to allot funds to specific purchases. Individuals can vary their patterns of expenditure in accordance with their varying means and tastes. The corporation itself also receives money, the most "liquid" or most readily exchangeable form of payment, for the products it places upon the market. By keeping accounts listing its expenditures of

funds and its receipts of funds, the corporation can determine whether or not its costs of production are being covered by the return it receives for the goods that it turns out. If unable to command an attractive price for a specific product, the corporation must try to reduce the cost of the items that comprise the product, while holding to the same price, or else, sooner or later, it must reduce or eliminate its production of that particular product and attempt to use its resources more effectively in other fields of endeavor.

The "roundabout" nature of the productive process in a highly industrialized economic system typically lengthens the time necessary to bring goods through the various stages from raw material to final product in the hands of the final consumer. Both the heavy investment in capital equipment required and the considerable time that must elapse before a return is realized upon expenditures for materials, labor, and other costs necessitate the use of some kinds of advances or credits in anticipation of future returns. The principal sources of these credits vary with differing forms of economic systems. In a capitalistic system, advances are supplied by the use of invested savings of individuals, or by loans from commercial banks using their own credit. In a socialistic, a communistic, or a fascist system of economic organization, the principal source of such credits would be the centralized state. Under any economic system, the power to control credit yields the power to determine the direction of production. If working capital cannot be obtained for a specific purpose, the proposal in question will not be undertaken. Decisions as to the proper choice of industry and as to the proper amount of credit to grant must be reached under any form of economic organization.

Small radio and TV shops may be erected and placed in full-scale operation long before a giant manufacturing plant could be constructed and tooled for assembly-line production. The capital requirements of this large-scale unit would be many times greater than those of its small-scale counterparts. To the extent that a company could not meet its increased capital needs out of past earnings, it would turn to individual investors and to private financial institutions for funds to meet its new requirements. Individuals and organizations thus approached would base their decisions as to whether to grant or withhold credit upon the risk of loss and possibility of repayment. These questions involve not only the selling of products at prices that cover all costs, but also the integrity of the firm itself. If the firm in question were less reputable or less well known than R.C.A., special inducements of a monetary and/or control-carrying nature would have to be offered to attract the requisite capital. As the cost of such loans becomes a factor in pricing the expected output, a point might be reached, sooner or later, at which the cost of additional credit would appear to outweigh the advantages to be gained from sale of additional output. In such cases, contemplated expansion plans would not be executed.

In all forms of economic systems, the production of goods and services is subject to varying degrees of risk and uncertainty arising out of such things as damage by fire, storm, and accident, changes in costs and prices, and changes in consumer demand. Predictable risks, such as fire damage or personal injury to employees, may be insured against in any form of economy merely by spreading the risk over a great number of persons. Individuals thus substitute small premium payments for the risk of large, uncertain losses if they personally are affected by the hazard. A number of real uncertainties in an economic system, such as changes in cost and demand, cannot be insured against or hedged, since they are not regular and predictable. Under socialism or fascism (that is, under collectivism), financial losses resulting from these unpredictable risks are borne directly by the government, acting for society. Under capitalism or individual enterprise, these uninsurable financial risks of production are focused upon a relatively small group of property owners or business enterprisers

within the particular units in which the mistakes in foresight are made.

Although R.C.A. plants, equipment, employees' health, and even the lives of key executives are heavily insured as a matter of good business practice, there is no way in which the company can obtain automatic insurance against the major business uncertainties it must face in planning for operations five and ten years hence. If a severe depression, an unfavorable court decision, or a sudden discovery by a competitor were to wipe out R.C.A.'s market position, the impact of this catastrophic event would have to be borne by R.C.A.'s own stockholders. These private owners of R.C.A. would have little opportunity to avoid the full economic consequences of such an occurrence. They would be subject to financial losses up to the full value of their stock holdings if misfortune struck their company. Society as a whole would suffer only indirect losses. Indeed if a court decision or a competitor's invention were to cause the company's downfall, the over-all economy might achieve a net gain entirely at the expense of R.C.A. stockholders. Such are the risks and rewards pertaining to enterprise under our capitalistic system.

In any economic system, all elements of production that involve scarcity affect costs in one way or another. Labor is a cost, because it requires a reward to induce "irksome" effort and because it requires payment for its maintenance. Managerial ability is treated as labor under a collectivistic system, but is compensated in different fashion by the opportunity to earn profits under a capitalistic system. Under any system, the provision of capital involves costs, if only those associated with the foregoing of immediate consumption of certain goods and services by members of the society who save wealth to provide capital funds. In a capitalistic society, this cost appears specifically in the form of the interest payments that borrowers of capital make for the use of producers' goods that belong to others. The form of payment known as rent in societies permitting private ownership of land may be abolished in collectivistic societies. Such action is possible, because the supply of land is a gift of nature and cannot be increased or decreased significantly by action of man. Thus, payments are not required to provide basic land resources. Improvements to land or extraction of raw materials from land involve production costs in the same way as do other products. The relative richness or poorness of specific plots of land does affect the productivity of labor under any economic system, and, in this indirect sense, land is a determinant of costs of production, even within a collectivistic society.

The ability of an organization to keep expenses below income may be used as a rough test of efficiency under any type of economic system. In a capitalistic system, the profit motive is relied upon as an incentive for action by enterprisers who presumably desire to maximize the spread between total income and total costs. In a collectivized economy, it is still important, however, to encourage efficiency and achieve control by setting up a planned margin between income and costs for various state enterprises. This standard margin can be used as a test of the ability of the managers, as well as of the foresight of the planners, once actual results are analyzed.

The managers of R.C.A. are as strongly advocates of planning within the firm as are the managers of specific enterprises within collectivistic economies. Planning at this level is a basic administrative technique. The great difference of opinion that exists in regard to planning arises at the over-all level. Collectivists maintain that it is feasible to construct a master-plan that will permit rational development of the detailed activities of all units within the economy. Advocates of an individual enterprise economy maintain that, in actual practice, the necessity for "sticking" to a single comprehensive plan under ever changing conditions would result in excessive loss of freedom by the citizens to the planners. We shall consider this issue in more detail at a later point in this text. (See Chapters 20 and 21.)

As evidence of flexible use of administra-

tive planning in business, we may cite action taken by the management of R.C.A. just after the merger with Victor and the signing of the "unification" agreement with G.E. and Westinghouse in 1929. Twin blows struck by the Great Depression and by the Justice Department of the U.S. government converted a planned expansion of facilities into a drastic curtailment of operations. The completeness of this turnabout is indicated by the fact that R.C.A. income dropped in 1932 to but 25 per cent of its 1929 level, and R.C.A. labor costs dropped to 50 per cent of their predepression total. The flexibility in planning on the part of the firm was such, however, that the company suffered but a slight loss during the depression through 1932 and resumed its long-run expansion program again in 1933. Hundreds of thousands of other management teams were forced to make similar adjustments to previous plans, so that their firms and the over-all economy might survive.

Under the difficult circumstances that prevailed during the Great Depression, it was felt by the electorate that an increased role should be played by government planners, who might concern themselves directly with the welfare of the economy as a whole. Through operation of the New Deal, World War II, Fair Deal, and "Cold War" programs of the Federal government, our "mixed" capitalistic economy has gravitated a measurable distance toward the intervention end of the freedom-planning scale. The trend has been far less pronounced in America, however, than in other quarters of the globe. This worldwide movement makes it increasingly important that we now consider the roles of economic institutions under alternative forms of economic systems.

ROLES OF POLITICAL AND ECONOMIC INSTITUTIONS

Economic systems operate through the functioning of a network of institutions which allocate decision-making powers to specific groups within the society. The two principal types of power in question are economic power and political power. Economic power is defined as the "power to make decisions concerning the use of productive agents, to participate in setting the prices at which goods are to be exchanged, and to share in wealth and income—in short, the decisions necessary to organize production and consumption." [2] Political power is the power to make laws, to tax, and to exercise the sovereignty of the state in controlling the actions of its citizens. There is, of course, a close connection between economic power and political power in modern states.

Under capitalism, fundamental economic power is placed largely in the hands of property owners. These owners, or managers acting as agents for them, utilize land resources, labor, capital, and managerial abilities in a manner designed to yield a maximum of profit to themselves. It is the hope of capitalism that, with little interference required on the part of the government, these enterprisers who are pursuing their own profit will act in such a way as to satisfy the wants of consumers in an efficient manner and produce the largest possible real national income. The institutions of capitalism provide for checks and balances in the exercise of economic powers by numerous competing groups. The government serves as referee and regulator, rather than as economic director, under capitalistic forms of organization.

Under fascism, certain features of capitalistic organization are retained, such as private property and business management of production. Business enterprisers and all other individuals are placed, however, under a multitude of restraints by government. Freedom of action for employer, labor, and consumer groups is replaced by government-imposed regimentation in the name of what government leaders consider to be the national interest. Both political power and economic power reside in the centralized government, rather than in the citizens of the state.

[2] *Ibid.*, page 24.

Under communism, as practiced by the Soviet Union, private ownership of property used in production has been abolished. Title to natural resources and to producers' capital has been vested in the government, which in theory holds it in trust for the workers, who are to control the economic system in that far-off day when there occurs the "withering away of the state." In the meantime, actual control and administration of the economic system reside with the government, which in turn is the vehicle of the Communist party as it operates the "dictatorship of the proletariat."

Under the capitalistic economic system and the democratic political system, which prevail in the United States, R.C.A. is able to make its views count for much in the setting of political and economic policies. The corporation acts through the various individuals and groups that comprise its organization. In the economic sphere, R.C.A. management, representing primarily the stock owners' interests, guides the economic activities of the company. It determines prices to be paid to suppliers of materials, capital, and labor, as well as prices to be charged consumers. R.C.A. employees exercise considerable economic and political power of their own, however, acting both as individuals and as members of union groups. All individuals associated with the company in any capacity whatsoever have opportunity to exercise power through economic bargaining and through political activity as voting members of political parties and of political pressure groups. In this country ultimate sovereignty rests with individual citizens.

BASES OF INDIVIDUAL ENTERPRISE ECONOMY

Although capital refers to things that assist in the production of other things for consumption, capitalism is a much narrower term. It refers to a "system of economic organization featured by the private ownership and the use for private profit of man-made and nature-made capital." [3] Capitalism is essentially an economic concept, but it is, in actual practice, closely related historically with various political, religious, and social institutions in particular societies. As our total society evolves, its basic institutions undergo major changes in form, though often not in name. Capitalism today in the United States, for instance, is substantially different in important respects from the system Adam Smith described as capitalism in 1776 in his famous work, *The Wealth of Nations*. The essential institutions of capitalism in America today, nevertheless, perform functions roughly comparable to those performed by those institutions in earlier forms of capitalistic economies.

One basic concept of capitalism, no less important because it is frequently misunderstood, is that individuals are assumed to act as "economic men." This statement simply means that informed, rational behavior by individuals balancing satisfaction and cost in arriving at economic decisions is taken as the norm. It does not mean that the existence of important irrational strains in man's behavior is denied. It simply means that the attempt of individuals and business firms to act as "economic men" under normal circumstances is used as an integrating force in our capitalistic economy. For it is only through a simplified assumption that individuals will, in the main, 1) seek to acquire the largest money income for the least expenditure of effort and 2) seek to spend their limited money income in such a way that each dollar yields maximum satisfaction, that business units can base their plans and decisions on orderly and systematic calculations. The knowledge that others normally base their decisions on the same types of calculations as he is a fact of great significance for each individual in a capitalistic society. For if one group within the economy based its decisions on an economic-man plane, while other important groups based their decisions on a variety of

[3] *Ibid.*, page 37.

unpredictable grounds, the resulting lack of integration would disrupt the intricate mechanisms that control the highly specialized and interdependent branches of our modern capitalistic economy. Individuals could not expect to plan the use of capital, labor, and other factors of production in a manner that would yield reasonable satisfaction to others and thus bring profit to themselves if human wants and needs were highly unstable. It is important to remember that, while alternative economic systems might eliminate the economic-man basis for decision-making, they must substitute some other integrating force for it if the system is to operate with reasonable efficiency.

If R.C.A. management found that its costs for the manufacture of television cathode ray tubes were far less than those of competing manufacturers, because R.C.A. possessed patents covering a highly superior process, the corporation might reasonably make plans to increase its plant capacity to take advantage of this superiority by expanding its share of the market. Such a decision would appear to be quite justified under normal business calculations. If, on the other hand, rival manufacturers were likely to expand this phase of their own businesses without paying the slightest heed to relative costs or to the profitability of their actions, R.C.A. management would not have a reasonably predictable basis for decision-making. If such situations were typical, the capitalistic system, which is after all a system aiming at the efficient utilization of human and material resources, would not be able to perform its basic function. Repeated failures in the basic mechanism would lead to the replacement of capitalism by an alternative system.

The right of individuals and groups to own private property is a second fundamental characteristic of the capitalistic system of economic organization. Private property refers to "the right vested in an owner, and protected by society, whereby the owner exercises control over the uses of the thing owned." [4] The thing owned may be intangible as well as tangible. Indeed, it is only when contracts or "legally enforceable agreements between two or more persons to do or forbear something" [5] are added to

[4] *Ibid.*, page 43.

[5] **con'tract** (kŏn'trăkt; *formerly, as in Shakespeare,* contract'), *n.* [OF. (F. *contrat*), fr. L *contractus* a contract, fr. *contrahere* to contract. See CONTRACT, *v.*] **1.** An agreement between two or more persons to do or forbear something, esp. such an agreement that is legally enforceable; a bargain; a compact; a covenant. A legal contract was defined by Blackstone as, "An agreement upon sufficient consideration to do or not to do a particular thing," and this has been the generally accepted definition, either literally or in one paraphrase or another. The law writers have, until recently, generally classified contracts as: ***contract of record,*** a conclusive legal obligation incurred through the intervention of some public authority and evidenced by public record, as judgments, recognizances, statutes merchant and staple; ***contract of specialty,*** or ***specialty contract,*** one depending for its validity upon the formality of its execution, that is, upon its being signed, sealed, and delivered in the form called a *deed;* and ***simple,*** or ***parol, contract,*** one not depending upon formality of execution for its validity, but upon the existence of a consideration. Contracts of record are now usually classified as *quasi contracts* (which see), as not being properly called contracts. Various classifications of contracts with reference to different principles are made; as unilateral and bilateral, gratuitous and onerous; real and consensual; executed and executory; aleatory or not, etc. (see these terms).

The commonwealths [of the United States] are inhibited from passing any law impairing the obligation of *contracts* (Constitution, Art I, sec. 10, § 1). *J. W. Burgess.*

In this connection the word *contract* is used in an older sense to mean what is now called a legal transaction or *act-in-the-law,* a much broader term, including grants between private parties and grants, charters, and franchises from the state. Cf. COVENANT; PACT; NUDUM PACTUM; CAUSE, 3; CONSIDERATION, 7; DEED.

2. The act by which two parties enter into the marriage relation; also, the agreement so to do; betrothal.

3. A drawing together; mutual attraction. *Obs.*

4. A writing made by the parties to evidence the terms and conditions of a contract (in sense 1).

5. The department or principles of law having to do with contracts (in sense 1).

6. A season ticket *Chiefly N. of Eng.*

7. *Card Playing.* **a** In auction or contract bridge, the winning declaration; the number of tricks named by the highest bidder. **b** Short for CONTRACT BRIDGE.

8. *Educ.* An installment of work under the Dalton plan. See DALTON PLAN

9 *Gram.* A contracted form.

10. *Produce Exchange* The customary unit of trading; as, one *contract* in wheat is 5,000 bushels *Colloq.*

Syn. — Arrangement, understanding, convention, pact — CONTRACT, AGREEMENT, BARGAIN, COMPACT, COVENANT, agreeing in the idea of a mutual arrangement between two parties, are here compared in their more general senses For their specifically legal usage see defs AGREEMENT is the most general term; it frequently implies little more than a mutual understanding. CONTRACT applies esp. to such formal agreements, often of a business nature, as are legally binding; BARGAIN, esp to agreements regarding purchase and sale A COMPACT is a stronger and more solemn contract, often applying to alliances between states; COVENANT has special reference to religious engagements. Cf PROMISE.

According to some versions of the story, a regular *contract* to the above effect was drawn up by a lawyer, and signed and sealed in the presence of witnesses Others say that Matthew Maule was contented with a private written *agreement,* in which Mr. Pyncheon pledged his honor and integrity to the fulfillment of the terms concluded upon. The gentleman then ordered wine, which he and the carpenter drank together, in confirmation of their *bargain. Hawthorne.*

No State shall, without the consent of the Congress . . . enter into any agreement or *compact* with another State, or with a foreign power. *Const. of U. S.*

I do set my bow in the cloud, and it shall be for a token of a *covenant* between me and the earth. *Gen.* ix. 13.

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ownership rights to tangible things that the private property concept takes on its full significance in the modern capitalistic economy. Private property in producers' goods places in the hands of owners the power to decide upon the uses to which specific units of material resources and capital shall be assigned in the productive process. The person who contracts to hire labor may direct the use of that labor to suit his own purposes. The person who acquires patent rights, trade names, sales rights, or other rights acquired through contract may decide how to use these rights in achieving the objectives of his enterprise.

Private property rights serve as incentives to saving or the accumulation of wealth in a capitalistic society. Capital goods must be amassed through saving, in any advanced form of economic system, but private saving of surplus income is the characteristic method for accumulating wealth under capitalism. The assurance given an owner that he may benefit in the future by deferring immediate consumption of goods presumably is a strong incentive for most people under most circumstances. The right to accumulate wealth and the power to make decisions as to use of property thus acquired are, of course, subject to important restrictions in modern society. Yet, as long as private-property owners set the basic pattern of decision-making in the economy and as long as the existence of private-property rights creates the chief incentive for the accumulation of wealth, the capitalistic system may continue to exist.

One of the principal reasons for the success enjoyed by R.C.A. in its operations to date has been the strong patent position it has built for itself in the radio-TV-electronics field. The company has paid many millions of dollars to inventors for the assignment of patent rights to R.C.A. These rights actually appear on the company balance sheet as intangible assets valued at upwards of $10 million. The effect they have on R.C.A. earnings would set their market value at several times this historical cost figure. Presumably the knowledge that it can acquire valuable intangible property rights of this sort encourages R.C.A. to invest large sums of capital in long-range programs of research and product development. The millions of dollars R.C.A. allocated to the development of TV during several decades of laboratory experimentation without prospect of short-run financial return serve to illustrate this point. Under other economic systems, such research functions might be financed by the state as part of the program mapped out by over-all planners. In an "individual enterprise," capitalistic economy, research activity of this type is undertaken primarily through decisions made by managers of business organizations, acting in the interests of private owners who wish to maximize their long-run profits.

Freedom of individual initiative is a third basic feature of the capitalistic economy. This phrase includes the freedom of the consumer to spend his income on whatever goods and services he desires and freedom of the working man to earn his living in whatever way he desires, as well as the more publicized freedom of the businessman to engage in whatever type of endeavor appears attractive to him. It is through this freedom that a capitalistic economy is presumed to allot the basic factors of production and the products of those factors to their best possible uses. The employer and the employee, the owner and the borrower, and the buyer and the seller all have freedom to exercise individual initiative, so as to respond to inducements that may lead them to maximize their contribution to the over-all economy.

Freedom of individual enterprise forms an important part of the broader freedom known as freedom of individual initiative. The entrepreneur's function has been described as that of "collecting and coordinating the needed quantities and qualities of the productive agents for the turning out of specific commodities and services." [6] If

[6] Loucks and Hoot, *op. cit.*, page 49.

units of the various factors of production are available for employment at attractive prices, the capitalistic economy relies upon the business enterpriser to exercise initiative in utilizing these resources of the economy. The profit motive serves as an incentive and guide to bring about the production of needed goods and services. In their search for ways to use the factors of production profitably, business enterprisers are expected to turn up new inventions, new methods of production and distribution, and new types of services. Under certain conditions, the government may intervene to contribute funds for special purposes as a matter of public policy. Yet, in the main, the profit margin between costs and revenues, as determined by the action of a free market, sets the pattern of production in a capitalistic economy. As long as a business enterpriser is *free* to exercise his individual initiative within a *reasonable* sphere, it is possible to operate a capitalistic economic system.

R.C.A. is faced with the task of operating effectively in an economy in which the consumer, the working man, and the individual investor are free to use their incomes and energies in whatever manner they may think best. Given this wide range for free choice, the management of R.C.A. must exercise continual foresight so as to anticipate what the shifting desires of these groups will be, in the aggregate, over periods of time as company operations progress. To a large extent, the company's ultimate success or failure rests upon the ability of the management to predict the felt needs of these important groups at the time when current company plans reach fruition. A semblance of order is brought into our complex economy by the willingness and ability of entrepreneurs to predict these needs and wants.

Neither R.C.A. nor any other organization could pretend to tell the individual citizen how he should spend his personal income in a market containing thousands upon thousands of possible choices. Commercial firms, utilizing techniques of market research in conjunction with programs for product development, are in a position to predict with reasonable accuracy, however, the aggregate demand for goods and services by the population as a whole and by special economic groups or geographical areas to which they cater in specific instances. R.C.A., of course, attempts to influence the thinking of the various groups with which it deals, as well as to conform to the expressed desires of these interest groups. Merchandising and advertising, labor-relations, community-relations, and public-relations programs have been developed by the company to aid it in achieving these objectives of influencing and getting along well with others.

A fourth basic feature of the capitalistic system is competition or economic rivalry among the various participants in the economy. Producers of all goods and services are rivals, in an indirect sense, in that they compete for a share of the limited income of consumers within the society. Many industries with widely differing characteristics are more directly competitive by reason of the fact that their products can be readily substituted for each other in satisfying consumer needs. The competition of the brick industry and the lumber industry would be a case in point. Yet the type of rivalry typically associated with the concept of competition in a capitalistic economy is that between a large number of independent sellers offering a commodity on the same market at the same time to a large group of independent buyers. The economic concept of "pure" competition is approached when so many buyers and so many sellers of a given item are active on the market that the action of no one individual unit is of sufficient relative importance to affect the trend of the market noticeably. Our large, national marketing centers for agricultural products often approach this end of the competition-monopoly scale. A single inventor holding a patent on a radically different product that is in great demand might move toward the other extreme and achieve a near-monopoly within his field. If the item involved were

an absolute necessity, the inventor's monopolistic powers might be increased, but his power would, by this same token, invite intervention by governmental authority to protect the public interest.

Through action of competition in the market place, prices are established for goods and services and for the various factors of production. Buyers and sellers acting as economic men presumably seek prices that will yield to them the best advantage as they act in their own self-interest. This action tends to preserve efficiency within the economic system as the high-cost, and typically least efficient, competitors are forced to reduce the scope of their activities or perhaps go out of business entirely. In general, the enterpriser who can utilize the factors of production to best advantage is in a position to offer a high competitive price for their services. Only in matters involving high public policy, such as national defense, schooling, and more recently housing, does the degree of intervention by governmental authority cause administrative decrees to offset the pressures normally exerted by a free and open market.

R.C.A. serves as a classic illustration of a company that started out with a near-monopoly in its field by reason of protective patents. Although R.C.A. has continued to lead the industry in effectively meeting a mushrooming public demand, that industry has grown increasingly competitive in its manufacturing and distribution phases over the decades. Through an open licensing system, R.C.A. has made available to others on mutually attractive terms the numerous inventions it controls. The government, itself, policed the industry to the extent required to keep massive units within it, such as R.C.A., G.E., and Westinghouse, competitive among themselves several decades ago when they sought to combine their interests. The subcontracting program urged by the government and carried out by the older companies during World War II has spread experience in electronics technology among a significantly larger group of competing organizations. By the nature of the highly technical field in question, firms with strong research and product-development organizations are able to establish and maintain primacy in the field with unusual facility. A large number of licensed "follower" companies compete vigorously with the leaders and among themselves, however, particularly within the radio-TV portion of the electronics industry. The activities of these firms serve to increase emphasis upon price appeal, advertising techniques, and sales promotion efforts in the merchandising of the industry's products.

The fifth basic feature of the capitalistic economic system, one which is, in many respects, the keystone of the entire structure, is the operation of the profit motive. The term "profit motive" refers to the situation, common in capitalism but in no other system, in which the hope of a positive difference between income and expenditure serves as an incentive to action by business enterprisers within the economy. This profit motive induces the enterpriser to organize business operations involving risks and uncertainty. It leads him to carry out these ventures in such a way as to yield an excess of money taken in over money paid out.

It may also be seen that the profit motive serves as a central controlling mechanism for the highly individualized capitalistic economy. This common motive induces most enterprisers under most circumstances to put productive agents into their most productive uses, insofar as they have the ability to foresee what these uses are or can be. Critics of the capitalistic, individual-enterprise economic system often decry the very existence of the profit motive on highly emotional grounds. It is important that the over-all purpose or function of profits be understood, as well as their alleged inequities in certain specific cases that have dramatic appeal. Moreover, these spectacular instances in which sizeable profits have been earned by entrepreneurs are to be balanced against untold instances in which disastrous losses have been the reward of the less fortunate entrepreneur. In extreme

cases, governmental intervention may be invoked to aid aggrieved parties.

In balance, it is highly debatable whether entrepreneurs as a class show a red figure or a black figure for their operations. This is particularly the case if a reasonable portion of the money income retained after payment of taxes is classified as wages of management and interest on investment. Regardless of the accounting balance to be struck on this score, it may be asserted that the profit motive has served society reasonably well, both as an incentive to action and as a mechanism for control in our system. Individuals who study carefully the total impact of capitalism and of other alternative systems of economic organization will be in a position to form relevant judgments as to the relative merits of the alternative systems, and various modifications thereof.

The long-range program conducted by R.C.A. over the past several decades, for the development of commercial TV, serves as an illustration both of the tremendous potentialities inherent in the profit motive and of its important limitations. Even the staunchest defenders of capitalism and the profit motive would have hesitated to predict in the early 1920's that American business enterprises would willingly allot millions of dollars of research funds and of researchers' energy toward the development of commercial TV at a time when the technical roadblocks to ultimate success were of monumental proportions. It took a venturesome mind, indeed, during the 1920's and 1930's, to refrain from discounting the possibilities of TV with the comment, "Let George do it; I'd prefer to make some money during *this* generation." It is reassuring—not alarming—to note that in recent decades R.C.A. and many other rather sizeable business organizations have built up both a competent staff of paid inventors and a comprehensive philosophy governing product development enabling them to undertake truly mammoth projects on a calculated risk basis. Business firms that plan their activities on a five-, ten-, and even twenty-year basis are far more likely to identify themselves with the long-run national interest than are firms whose pursuit of profits is conducted on a hand-to-mouth basis. On the other hand, the competitive element in these research and development races between rival concerns often forces individual firms to take their profits in the short run at the cost of their own and the public's long run. They act in this manner through fear that rival companies will so act if they themselves are not the first to do so. R.C.A.'s premature exploitation of its TV patents in 1932–33, 1939–40, and possibly again in 1945 48, is attributable in large part to a natural desire to "cash in" on its current lead over the opposition.

THE WORLD ECONOMY

People everywhere are alike in their basic desires for economic security and economic abundance. The content of these concepts will differ from nation to nation and from time to time, but the basic desires are common to the inhabitants of all nations, regardless of political or economic systems and regardless of ideologies.

After World War I, the major countries of the earth, with the conspicuous exception of the United States of America, entered into an international organization to attempt to find a solution for their common problems. Although the League of Nations instituted a number of important projects, it failed ultimately in its basic purpose of keeping the peace.

As World War II raged toward a climax in 1945, 50 non-Axis nations met at San Francisco to lay the foundation for a second international organization designed to secure peace and plenty for the peoples of the world. It was the hope of the community of nations represented there that a new, international order could be founded "on right instead of on might,[7] on law in-

[7] Eelco N. Van Kleffens, "The United Nations and Some Main Trends of Our Time." *The Annals of the American Academy of Political and Social Science,* Vol. 252, page 72. July 1947.

stead of on force." The rights of the individual, as well as international law for states, are matters of concern for the United Nations organization. Economic, social, health, and cultural projects find their place on the U.N. agenda, as do the more traditional items concerning the political relationships of states.

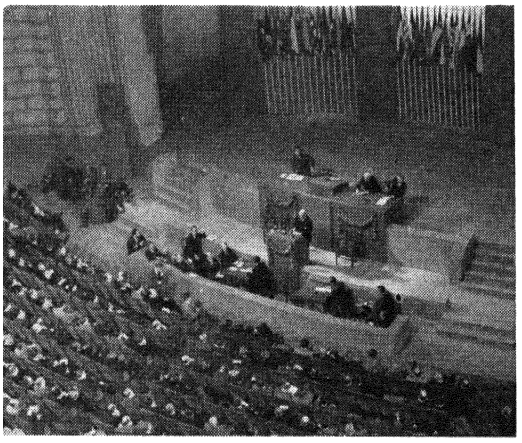


Figure 5-2: United Nations Conference on International Organization, San Francisco, 1945 (*United Nations*)

After World War II, the American people accepted the premise that they must work with other peoples for a better world if they themselves are to enjoy the fruits of American productivity in peace rather than exhaust their resources a few years hence in a third world conflict. Our key role in World War II, plus our industrial and financial strength, inevitably placed the United States in a position of leadership within the United Nations' organization. Only the Soviet Union among all the nations of the world could challenge our leading position in this effort to build a secure and stable world.

Unfortunately, the Soviet rulers reverted to type at the war's close. Soviet obstructionism, through exercise of the veto power within the U.N., and Soviet infiltration into neighboring states, through use of satellite armies, made clear the Russian adherence to the familiar pattern of totalitarianism. Stalin's goal remained not one world for all, but the dictatorship of the proletariat over the bourgeoisie to be established for Communism through violent revolution and world conquest. Behind this front of puppet Communist regimes were the imperialist interests of Soviet rulers. For Soviet strategists, the United Nations was merely an instrument through which the Western powers sought to "rule" the world. Communist ideologists clung to their belief that peace and plenty depend upon worldwide adoption of the Soviet system and upon complete eradication of any non-Soviet type of society.[8]

Although the United Nations is an imperfect organization in an imperfect world, it does represent a beginning on the road to moral progress. It coped with the Palestine and Korean crises in satisfactory fashion. It has the merit of not being simply an idealistic blueprint that purports to show that there is some way "of beginning at some place where we are not, to go to the place where we want to go."[9]

Through machinery furnished by the United Nations, in both the military and the economic spheres, the Western democracies are in process of building a stable world. The darker-skinned peoples in the non-Soviet orbit are rising to the full stature of nationhood and international equality, as 19th-century Western imperialism suffers its final eclipse. The governments of free nations are becoming more representative of all the people, as labor and the broad middle class develop their latent political strength. Permanent U.N. agencies, such as the International Trade Organization and the Food and Agriculture Organization, as well as large-scale organizations set up to administer the Marshall Plan and the Truman "Point Four" Program, are formulating

[8] Joseph S. Roucek, "One World Versus an Iron Curtain World." *Ibid.*, Vol 258, pages 61-62 July 1948.

[9] Roger N. Baldwin, "What Road to World Government." *Ibid.*, Vol. 264, page 14. July 1949.

plans for the orderly development of the world's resources. These constitute the major developments around the United Nations' core, which keep alive hope that ultimately unending peace and progress for all mankind will be assured.

THE "POINT FOUR" PROGRAM

As a specific case study of what one nation of good will might accomplish in leading the world along lines laid down in the United Nations charter, let us consider certain features of and implications of the "Point Four" program, first broached by President Harry S. Truman in his inaugural address on January 20, 1949. Mr. Truman stated, as a fourth point in his address, that "We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement of underdeveloped areas" of the world.

President Truman may be further quoted as follows:

> Our aim should be to help the free peoples of the world, through their own efforts, to produce more food, more clothing, more materials for housing, and more mechanical power to lighten their burdens. . . .
>
> . . . this program can greatly increase the industrial activity of other nations and can raise substantially their standards of living.
>
> . . . And the key . . . is a wider and more vigorous application of modern scientific and technical knowledge.[10]

If such a program were to reach fruition, it could mean the construction of a bright new world whose blueprint would rival the far-off utopia of the Communists in its dramatic appeal along ideological lines. National, cultural, and political barriers to the interchange of materials, people, and ideas would have to be toppled if a broadly-construed "Point Four" program were to succeed. Every nation on the globe is "underdeveloped" in many important respects. In an unending struggle for economic self-sufficiency, each nation has struggled to better its position in terms of raw materials, food supply, industrial plant, and industrial output. If the world economy were basically one, a different, more integrated approach to these problems might well be made.

In implementing any "Point Four" program there is need at the outset to arrive at some tentative working definition and standards as to what constitutes "underdevelopment." "Underdeveloped in relation to what?" is the question, for it is clear that degree of economic development is a comparative matter. Although present levels of industrial and agricultural production are only crudely measured in many quarters of the globe, it seems reasonable to conclude that large sections of Central and South America, Africa, Asia, and the Pacific Basin islands are highly underdeveloped. Included in this category are more than two-thirds of the world's population, most of whom are of the dark races. Industrial plant and income per capita are only one-tenth as great on the average in these lands as in more highly developed areas. Mechanical energy produced per capita is only one-twentieth as abundant. Food consumption per capita is barely at the minimum considered necessary to sustain life. Illiteracy is widespread and disease is rampant by reason of pitifully inadequate facilities for education and health. One of Hobbesian bent might well conclude that here indeed the life of man was "poor, nasty, brutish, and short." Yet, strangely, though perhaps understandably, the underdeveloped areas of the earth have higher birth rates than the more favored areas, and they possess the more rapidly expanding populations.[11]

Mere poverty and misery do not constitute conclusive proof that a particular country is underdeveloped. There remains the

[10] Thorsten V. Kalijarvi, "Point Four in the Contemporary Setting." *Ibid.*, Vol. 268, page 5. March 1950.

[11] John K. Rose, "Needs and Resources of the Brave New World." *Ibid.*, Vol. 268, page 10. March 1950.

practical question whether there are resources available in the area for development under known techniques, the products of which might be economically useful if only the scarce factors of production are added. To overextend the development of a particular area in a particular respect, for political or other noneconomic reasons, might, in the long run, create more, rather than fewer, problems both for the area and for the world.[12]

The National Advisory Council, which considered the "Point Four" program for the U.S. State Department in 1949, classified 53 countries containing 85 per cent of the world's population into three categories for purposes of comparison. In the "developed" group, it placed 15 of the most advanced countries, which accounted for one-fifth of the world's population. These nations had an average per capita income of $461 annually, immediately prior to World War II. The United States headed this group with an income figure of $554 at that time. (By midcentury this U.S. dollar figure had almost tripled.) In the "partially developed" group, it listed ten additional countries that accounted for one-sixth of the world's population. They had an average per capita income of $154 annually prewar. Soviet Russia was placed at the midpoint of this second category, with an income figure of $158 per capita. In the "underdeveloped" group, it named 28 countries that accounted for two-thirds of the world's population. These states had an average per capita income of only $41 annually prewar. The populous Republic of Indonesia anchors this list of distressed nations with an income figure of $22 per capita, which is $7 less than that of China and $12 less than that of India.[13]

If the gap between the developed and the undeveloped countries can be narrowed, or if the progress of the economically most retarded countries can at least be accelerated in terms of their own timetables, both the "Point Four" program and the U.N. technical assistance program might be regarded as successful. The problem is so stupendous and so basic to the world economy that, barring the early application of as yet unforeseen discoveries, it is susceptible to really substantial improvement only as the years stretch into decades. Initially, it is a problem of establishing the direction, as well as the pace, of world economic developments. Fortunately, this process of development can be cumulative in effect. Its effects may be multiplied in the later stages through self-help by newly-trained citizens in the economy being aided.

In the long run, the United Nations looms as the natural agency for the administration of technical assistance programs designed to raise the level of the world economy. Difficult political and financial problems, as well as military ones, must be overcome before that day can arrive. Through its specialized agencies, however, the U.N. is acquiring technical competence and is building trained staffs that will be invaluable in carrying out future programs vitally affecting the diverse nations of the world. The U.N. is in a position, as no individual country can be, to visualize the total problem in terms of the world's over-all needs and resources, without adopting a special point of departure. Moreover, many countries will in time come to prefer to arrange for assistance from the United Nations, with its assurance of multilateral cooperation, rather than to enter into special arrangements upon a bilateral basis with an individual state.

[12] *Ibid.*

[13] Howard S. Piquet, "Point Four and World Production." *Ibid.*, Vol. 268, pages 149–151. March 1950.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	74	In the face of Gallup Poll findings, which emphasize the surprising inability of the average citizen properly to identify major ideas, events, and personalities in the news, can you support the statement that "the world-wide impact of ideas and events should not be underestimated"?
2	74–78	What factors limit the rate of growth of a firm, such as R.C.A., in its ability to utilize land, labor, capital, and managerial skills to satisfy the needs of our economy?
3	75–76	What functions are performed by the price system in an economy in which consumers are permitted freedom of choice and in which products are not rationed?
4	76	If the "roundabout" nature of the productive process in a highly-industrialized economic system typically lengthens the time required for completion of the production cycle and requires heavy investment in equipment, why is production in modern society still tending to become increasingly "roundabout"?
5	76–77	Distinguish between "insurable risks" and "real uncertainties" and give examples of each.
6	77–78	May a businessman consistently advocate administrative planning within the firm and yet oppose comprehensive planning for the rational development of all units within the over-all economy? Explain the issues involved.
7	78–79	Describe the locus (location) of fundamental economic and political power under fascism, communism, and capitalism.
8	79–84	Identify five basic concepts underlying capitalism and describe briefly their importance for the operation of the capitalist or individual enterprise economic system.
9	79–84	"Adam Smith, David Ricardo, and the classical economists have foisted upon succeeding generations the concept of an 'economic man' in an effort to rationalize the excesses of capitalism. The 'economic man' never has existed and never will exist in actual society. This fiction is thoroughly vicious in its implications and should be wholly discarded by those economic thinkers who have the true welfare of the 'common man' uppermost in their minds." Evaluate this statement.
10	79–84	"The right of individuals and groups within society to own private property in producers' goods implies that selfish interests may legally withhold vital goods and services from the consuming public if such a move will serve their ends. The public interest demands that ownership of producers' goods be vested in the state so that the rights of all of our citizens will automatically be taken into account." Evaluate this statement.
11	81–82	In what ways might "freedom of individual initiative" as exercised by consumers and workers complicate the problems faced by businessmen in the exercise of their "freedom of individual enterprise"?
12	82–84	Do not the indirect rivalry of all producers for the consumer dollar and the ease of substitution of alternative products ensure the public that the benefits claimed for competition in our modern economy will automatically accrue to them? Explain.

QUESTION NO.	PAGE REFERENCE	QUESTION
13	82–84	Is it essential to the survival of the individual enterprise system that businessmen, as a whole, earn profits beyond "the wages of management" and "interest on investment"? Explain.
14	84–87	What steps might be taken by member nations of the world community, singly or collectively, to improve the status of the world economy?
15	Chs. 4 & 5	What role might be played by radio-TV in a program designed to improve the future outlook for the world community?

6
A Dynamic View of the Individual Firm: G.E.



THE FOLLOWING WORD SKETCHES of G.E. Electronics Department personnel are designed to simulate, in some measure, the experience that might be gained by an individual who accepts employment with a specific firm. They emphasize the theme that "business enterprise is people."

1. GRACE STOLSKI—G.E. ASSEMBLY WORKER [1]

WOMEN ASSEMBLERS
100 Jobs Available 100
on the
First and Second Shifts
at
General Electric
No Experience Necessary
Apply Now at Electronics Park

Grace Stolski, North Syracuse High '51, and nine other beginners hired by General Electric near the close of the preceding week reported with the first shift at 7 A.M. Monday morning. A buff time card bearing the legend "Grace Stolski, 11,613" gave Grace the feeling that she was making a personal bank account entry as she punched in at 6:54 A.M. Literally every minute counted as she set about her first task: that of learning the details of her assembly job on a dummy practice line.

The photo at the top of the page shows G. E.'s Charles E. Wilson inspecting work of women assemblers on Electronics Park TV line. (*General Electric Company*)

The new girls reported to their instructional supervisor, Millard Thompson, familiarly addressed as "Milly" by his charges, as well as his management associates. Foreman Thompson of the learners' line was valuable to G.E. by reason of his peculiar knack for inspiring confidence, steadiness, and a consequent "will to learn" in young women contemplating radio-TV assembly tasks for the first time. Milly had acquired this capacity for dealing with female learners during World War II. He had used it to good advantage in thousands of instances since the cessation of hostilities. Milly was a slender, rather ordinary-looking man of 55 who had been with the company for more than 30 years. His technique was the low-pressure one of assuming good faith, but no particular aptitude or ability, upon the part of his charges.

Grace, it appeared, fitted Milly's standard

[1] Production personnel, activities, and situations described in this chapter are composite and not actual.

subject specifications to a T. She had never seen the inside of a radio or TV set. She knew nothing about mechanical or electrical parts. Her home economics courses had stressed cooking, not sewing, and thus her finger dexterity was largely undeveloped. Nevertheless, as a girl of no small intelligence, Grace was able to follow instructions upon adequate demonstration. At this stage, though a bit uneasy about the newness of the situation, she had a burning desire to learn.

The assembly job to which Grace was to be permanently assigned was that of fitting terminal board number 2 to the main TV-receiver chassis in G.E. production line number 4. Terminal board 2 itself consisted of 127 pieces, assembly of which called for 163 operations. Thirty-eight subassembly operators turned out 1,000 such terminal board units a day. The completed unit consisted of several tubes, a dozen springs, several dozen wires and coils, and a dozen or more domino-shaped filter units, which had wires coming out of each end. The completed TV set contained several other subassembled units besides that to which Grace was assigned. There was a terminal board 1 subassembly and a terminal board 3 subassembly, in addition to a head end, yoke, focus coil, front panel, and shield assembly.

Grace was to be assigned the task of joining terminal board 2 to the TV chassis after the chassis had proceeded a good part of the way down the main assembly line. Terminal board 2 went on after mechanical parts and component parts had already been attached to the chassis. It was also preceded by the initial wiring of the chassis and by the attachment of condensers, coils, resisters, and capacitators of assorted sizes and shapes. The shield, yoke, front panel, and terminal board 3 units were also slipped into place at earlier points in the assembly line. The TV chassis was thus a complicated-appearing mass of assorted, multicolored electrical parts by the time that it inched along the assembly line to Grace's station.

Milly conducted Grace through the area where the terminal board 2 subassembly itself was performed so as to familiarize her with the way in which her own operation fitted in. He then permitted her to observe several girls performing this identical task on the regular assembly lines. Grace was encouraged by this method of introduction and had all of the movements filed away in her mind within an hour's time.

She was assigned to a learners' line for a full week. It was expected that, by the end of this period, she could hold her own in a regular production line. On Monday and Tuesday Grace was acutely conscious of her every movement. She felt tense and strained despite Milly's frequent efforts to relax her. Her fingers numbed occasionally and her back ached almost constantly as she tried to produce for sustained periods at assembly line speed and rhythm. When not numbed, her fingers became increasingly tender near the tips where the wires were gripped and near the palm where the hand tools were pressed when in use. At times she felt that she would sell her soul if only she could reverse the operations so that her right hand could merely hold while her left hand performed the assembly operations. The degree of precision required and her lack of ambidexterity ruled out this mind-relieving possibility. Soon Grace began to replace this thought in her mind by reviewing consciously some of the more pleasant experiences that she had had in the recent past.

Wednesday was the worst day of all. Grace felt like quitting. She had hoped that Wednesday's operations would go more smoothly than the first two days. For a while they did, but when she tried to raise her tempo to standard operating speed, her coordination went awry. She began to think about finger movements and about the sequence of operations. This conscious attention to routine repeatedly spoiled Grace's rhythm whenever she endeavored to work at production speed.

Grace was grateful that Milly did not see fit to oversee her efforts very closely at this particular stage of the learning program. In

laying out the work for her initially, he had described each major piece in the assembly in a very interesting way by telling her what it did and why the piece fitted in where it did. Milly had also shown her what he called the key points of the job. He had her learn these points so well that she could recite them back while carrying out the steps herself. He had been close at hand to help her over rough spots the first two days. Grace was just as glad to have a breather this third day, for she was bogging down in a deep rut.

When Grace straggled back from lunch, she found that Milly had rearranged the line. She and six other girls who were preparing for TV line 4 were now grouped as a unit in the learners' assembly line. At this point any change was welcome to Grace, so she launched into the afternoon's operations with renewed vigor. She found herself chatting gaily with her more recent acquaintances about a variety of subjects of miscellaneous importance. Grace's active mind did not give full attention to either this running conversation or to her now even-flowing job. She had gained much this afternoon in confidence and in ability. The feeling she had was good.

Six months after signing on at G.E., Grace Stolski was already displaying the distinguishing characteristics of an "old hand" on the company's assembly line. The plant was known to be taxing its rated capacity in an effort to meet the Christmas demands for TV sets, which were being placed upon G.E. distributors. Grace was not the least bit interested in the booming nature of the market. She was increasingly concerned, however, about her foreman's delay in approving her request for time off for Christmas shopping.

Grace had watched her foreman, Tom McCarthy, becoming increasingly irritable during recent weeks. She attributed this conduct to production pressure from above and, thus understanding it, was not much disturbed at the harshness of his conduct. One day Tom "bawled her out" for a minor error in her work that Grace had let go unchecked, much against her better judgment. Tom's "dressing down" got to Grace this time, particularly when she knew deep within herself that he was perfectly right, and that she usually didn't let things go that way. Tom apparently had saved up everything he "had on" Grace for just such an occasion. He proceeded to lay down the law in no uncertain terms. Grace checked an impulse to tell Tom off. She returned to the line unrepentant and seething within.

Basically, however, Grace liked Tom McCarthy. She often said as much to the girls when they griped about trivial things. Tom had his own troubles, she knew. The production superintendent was always after him—even about sweeping the floor near the production line. Tom was constantly plagued by the red light that flashed on the scoreboard over the line when quality was down. If it wasn't the superintendent, it was some smug trouble-shooter or some other staff man. Each such individual was interested only in his own personal slant and was visibly angry if he had to wait to talk with Tom.

Grace had made a record of "My Day at Work" for her personal diary. She had started the diary in July, shortly after taking her position at G.E. It was hard to write in the pages going back to January, but Grace tried to recall earlier events so that the diary would not start in the middle of a year. Grace got up on the day she chose as "typical" at 5:15 A.M. By 6:00 she had showered, dressed, and straightened things up. She then went downstairs to help her mother with the family breakfast. Friends from the plant who lived in the neighborhood drove by for Grace at 6:30 sharp.

"Grace Stolski, 11.613" usually entered on cue at 6:54 A.M. The punching time rarely varied more than a minute or two either way. That was because G.E. was located in the wide-open spaces and was easily approached from the north end of town. Tom McCarthy was always first on the scene at assembly line 4. He liked to sit at a table near the hook files, thumbing through reports with his hat still on. He greeted Grace

pleasantly as she walked up. "You make a good appearance anyhow," he'd once told her, and she was pleased at the dry compliment intended.

At 7:00 A.M. sharp the lines started up. The accompanying bell still reminded Grace of a cash register, although it didn't sound that way, she knew. Grace's now-trained muscles gave her a sense of power as she worked smoothly along. Earning power was what she called it. A certain pride in her productivity and in that of the group was really what was involved. Grace had plenty of time to catch up on her thinking during the first morning hours. She felt sorry for the girls who got fidgety and needed to chat right away. Grace had read that persons of high intelligence liked time for reflection. She agreed that things were best this way. About the time of the morning break, Grace's mood usually began to change. She and the nearby girls usually got a lively discussion started during the rest period and continued right on until lunch time as the line resumed. The morning break came at 9:15 A.M. It gave the girls a chance to move around or to relax completely for ten minutes.



Figure 6-2: General view of TV assembly lines in the receiver building at Electronics Park. (*General Electric Company*)

At times the "inch-along" conveyor belt was a hard task-master. If a worker left her station for any appreciable period while the line was moving, her next couple of work-pieces crept by unattended unless somebody else doubled up operations or unless several others shared the load. Occasionally Tom McCarthy sat in for an operator, but usually the girls had to work things out for themselves. Through ignoring requests of this sort, the girls had on several occasions twisted the knife of group ostracism in the back of girls who, temporarily or permanently, didn't fit in with the group code. Grace had broadened her knowledge of terminal board 2 operations considerably during the past few months by filling in for girls who operated stations on both sides of her.

During the late morning hours and during the late afternoon hours, production typically became a bit ragged. Tom McCarthy moved up and down the line at such times, asking the girls to cut down on rejects so that the group could make the day's quota of good assemblies. The girls always responded to Tom's urging at this point. They took pride in their ability to turn out the work when the chips were down. Grace felt that the girls buckled down as much to please their foreman at the day's end as to qualify for the usual group bonus. It reminded her of the crew races she had seen on Lake Onondaga. Near the finish line, the coxswains of both crews had called for "ten big ones," and the shells raced ahead in a driving finish. The day's-end spurt always made Grace realize that she was an important member of a team.

The 3:30 change-of-shift bell brought the G.E. production lines to a grinding halt for a brief period while first-shift employees scrambled antlike over the 155-acre Park, each intent on following out his normal rendezvous and exit routine. Within a few minutes' time, second-shift employees who had arrived earlier had many of the lines going again. The change of shifts was nevertheless a period of hustle and bustle that engendered in Grace a restless desire to get some place in a hurry. She was satisfied

with her job and actually enjoyed the companionship of her fellow workers while carrying out the production routine. Yet Grace always felt a period of exhilaration as she regained her freedom at the end of each shift. She became her own leisurely self again, and left the rhythm of the assembly line behind.

2. *SAM REDDICK—FIRST-CLASS MACHINIST*

Sam Reddick, Vocational High '37, was a bachelor in his early thirties who already boasted an interesting and diversified career. After completing a commercial course in high school, Sam had spent four hard-working years as an apprentice machinist just prior to America's entry into World War II. Sam had joined the Navy as a volunteer several months before Pearl Harbor. After completing boot camp, he started his career afloat as a fireman in the engine room of a destroyer. Sam saw action on "D" Day in North Africa and in several night engagements north of Guadalcanal. He spent nearly 12 hours in the water when his outgunned destroyer met defeat at the hands of a Nipponese heavy cruiser. A U.S. submarine surfaced to reclaim Sam and several dozen other surviving crewmen just as despair and choppy waters threatened to overwhelm their life raft. When Sam was returned to a personnel staging pool at Pearl Harbor, the Navy's improved screening turned up the fact that he was a trained machinist. Sam was reclassified as a machinist, first class, and remained at Pearl for the duration.

Upon returning to the States, Sam Reddick decided to start his own machine repair and parts shop in Syracuse. A local businessmen's committee okayed his plan, although pointing out pitfalls. As a returning veteran starting a small business, Sam was able to obtain a job-type lathe, drill press, shaper, milling machine, and grinder from the Surplus Property Administration. Sam's business venture experienced a shaky start. Contracts were small and erratic in timing, and not too attractive in price. Moreover, Sam did not take easily to the business side of shop work. He liked to work with metal at the machines but did not relish the burden of serving as shop manager even in his own shop. After a year of pot-luck operation Sam decided that he would sell out. He sold the job shop as a going concern to another G.I. In doing so, Sam realized several hundred dollars more than the actual cost of the equipment a year earlier.

Sam Reddick joined G.E. in Syracuse as a first-class machinist, just as the move from the wartime Thompson Road plant to the postwar Electronics Park plant was being executed. Sam thus helped to install equipment in the machine shop and on the production lines at the Park. He naturally felt considerable pride in having been in on the establishment of operations at the great, new plant.

The job machine shop in the specialty and tubes building serves all divisions at the Park. It is fitted to undertake any individual job likely to be assigned to it. The machine tools in use there are predominantly of the "general purpose" or "universal" type. By turning handwheels, adjusting clamps, changing cutting tools, and using jigs and fixtures, Sam and his fellow machinists are able to perform a multitude of different jobs of a low-volume, nonrecurring nature. The service performed by the shop is in sharp contrast to the highly-specialized, high-volume, assembly-line operations, which comprise the main production business of the Park.

Sam's four-year apprenticeship, plus his hitch at Pearl Harbor, had enabled him to gain familiarity with all types of machine tools. He could set up, adjust, and operate every machine in the shop. When given a blueprint containing information as to the size, shape, and materials needed for a given object, he could plan a logical sequence of operations to produce that object precisely as called for by the print. Sam's training in metallurgy enabled him to heat-treat and temper metals to achieve the de-

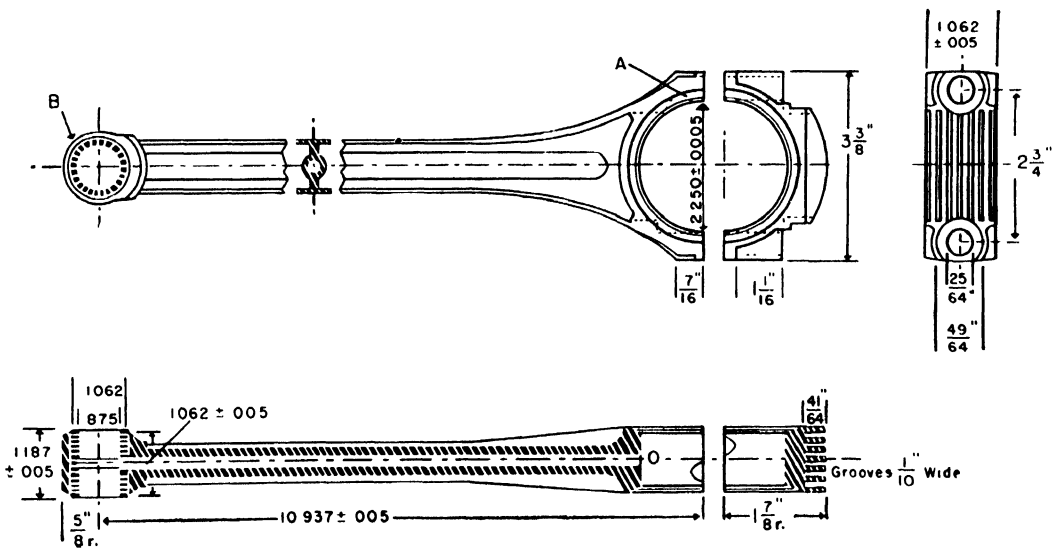
sired properties of brittleness or toughness as well. The keynote to Sam's work is precision. He must read specifications correctly, measure accurately, control machine-tool cuts so as to keep within "tolerance," with permissible errors often ranging from a thousandth to a hundred-thousandth of an inch. Sam literally had to split hairs (three-thousandths) to achieve the accuracy called for by job prints.

Machining a connecting rod. During a typical week at the Park, Sam performed a variety of interesting tasks, each of which consumed perhaps two to a dozen hours of his time. For example, one morning the machine shop foreman assigned to Sam the job of machining a pair of foot-long connecting rods. The function of these rods would be to transmit the up-and-down reciprocating drive of pistons in an experimental gasoline engine to the rotating crankshaft, so that emergency power might be generated for a portable military communications system, which was being developed in the commercial equipment building. If this engine proved suitable, it would be produced in greater quantity at other G.E. plants. Yet a number of special parts needed for this pilot model were now to be machined initially in the Electronics Park job machine shop within sight of the experiment itself.

Before starting to work on the two drop forgings of connecting rods that the foreman delivered to his bench, Sam studied the blueprint or working drawing of the finished piece required (see Figure 6–3). He determined which surfaces were to be machined and what measurements were desired. This blueprint contained three single-dimension views of the piece in question: a top view, an end view to the right, and a front view below the other two. A cut-out sectional view showed additional details concerning the shape of the metal used.

Sam's first step in tackling this job was to jot down the sequence of machine operations he planned to use in turning out finished connecting rods. Before proceeding with his first operation, Sam drew out from his rather elaborate hand-tool box particular

ENGINE CONNECTING ROD



SOURCE: U.S. Department of Labor, Job Descriptions for Job Machine Shops. Washington, D C, 1938

Figure 6–3

implements, such as a steel rule, calipers, and wrench, which he would need in executing various moves. He then selected the proper face-milling cutter from a group of cabinets containing several hundred different cutters and proceeded to carry out operation one.

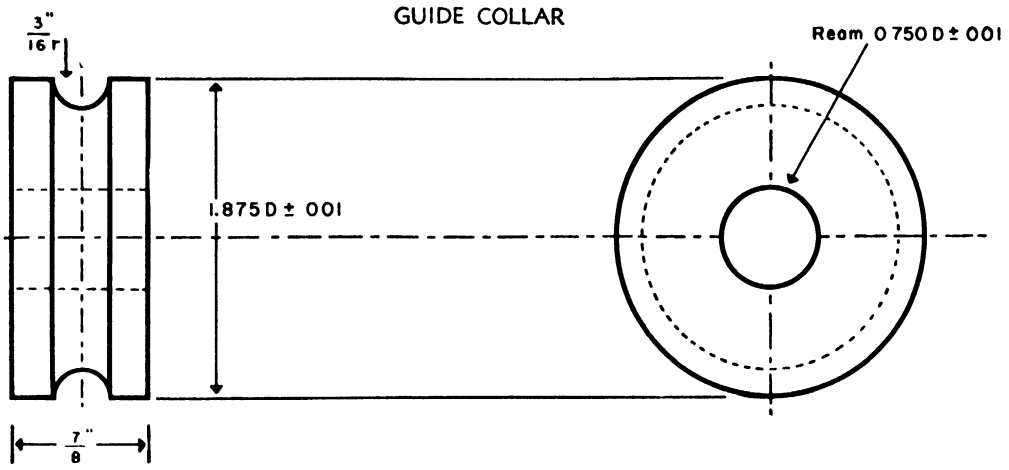
Operation 1: Face mill upper and lower sides of crankpin bearing boss and wrist pin bearing boss.[2] Sam decided to finish these bosses (see Symbols A and B, Figure 6–3) on a Milling Machine (see Figure 9–11, Chapter 9). This common job shop machine tool shapes the workpiece by action of a rotating cutting edge against the surface to be machined. Both the cutter, which is mounted on a cylindrical rod or arbor, and the workpiece, which is clamped to a worktable, may move at a great range of speeds to suit the hardness of the metal and the depth of cut desired. Sam clamped the connecting rod blank to the table with great care. He used a piece of emery paper between it and the table to improve the gripping surface and thus reduced the possibility of the piece sliding when engaged by the rotating cutter. Using a sensitive handwheel, Sam raised the worktable until the calibrated dial on the wheel indicated that he would obtain the desired depth of cut. Although reasonably sure of his calculations and of the characteristics of this particular milling machine, Sam fed the table longitudinally into cutting position by means of a handwheel until the cutter just grazed the edge of the workpiece in a trial cut. After measuring the thickness of this cut on the workpiece directly, Sam touched the lever that controls the power-feed of the table. He thus caused the worktable containing the connecting rod blank to pass slowly under the rapidly rotating cutter teeth. After milling both the large and small end of the rod in this fashion, Sam turned the workpiece over. He readjusted his handwheels, and repeated the process, so as to machine the two bosses on the other side. He then repeated both steps of the operation on the second piece to be machined.[3]

Setting up a turret lathe for high-volume production. Before he could finish the rest of the operations called for on the connecting rod job, Sam was asked by the machine shop foreman to set up a new job on the turret lathe. (See Figure 9–14, Chapter 9.) The G.E. shop was frequently assigned the task of turning out particular parts needed suddenly in sizeable quantities for subassemblies. The job order Sam was to set up on the turret lathe called for the machining of 5,000 guide collars made from 2-inch diameter bar stock. (See Figure 6–4.) The machining of just one of these collars on an engine lathe would involve the setting up and changing of tools and workpiece positions for 8 different operations. All of these operations could be accomplished rapidly (and several simultaneously) on the turret lathe without any time-consuming changes whatsoever. The efficiency ratio under these conditions was at least 10 to 1 in favor of use of the turret lathe. The turret lathe differs from the simple engine lathe in that the tailstock or "dead" center piece of the lathe is replaced entirely by an hexagonal turret. This turret can be indexed (turned 60 degrees at a time) so as to present each of its six tool-holders in rapid succession for machining operations. The normal tool post on the cross-slide carriage is also replaced by a square turret, which can be indexed 90 degrees at a time so as to present four additional tools for the machining of the piece.

It may readily be appreciated that, once

[2] The crankpin bearing boss (Symbol A) is the raised flat surface surrounding the hole at the larger end of the connecting rod where the rod fits around the crankshaft. The wrist pin bearing boss (Symbol B) is the raised flat surface surrounding the hole at the smaller end of the connecting rod, into which is fitted the "wrist pin" that joins the rod to the piston.

[3] See U. S. Department of Labor, *Job Descriptions for Job Machine Shops,* pages XIX-L. Washington, D. C.: U. S. Government Printing Office, 1938.



Material: 2" D Hot Rolled Machine Steel Bar Stock

Tolerances: ±.010 unless otherwise stated

Deburr to break sharp edges

GENERAL ELECTRIC COMPANY	
GUIDE COLLAR No 14a	
Scale: 1/1; Mat'l. M S.	
Dwn: Cover, 4/9/51 Ck'd: Neter, 4/13/51 App'd. Nolan, 4/14/51	1861

Figure 6–4

Sam figured out the sequence and timing of operations required for machining the piece and actually set up the necessary tools, the actual operation of the turret lathe would be a relatively simple job. Sam's training and skill were required only in the setup itself. The actual operation was left to one of the machinist helpers working in the shop.

Sam's procedure in carrying out this assignment may be described as follows: 1) Through inspection of the blueprint, he determined what operations were required. 2) He listed which operations could be performed on both the square and hexagon turret and which were necessarily limited to one or the other. 3) He then arranged operations in sequence on the two turrets and combined them in such fashion as to accomplish the entire series of operations in the shortest possible time. 4) He inserted the required tools in their appropriate stations on the turrets. 5) He selected an appropriate collet chuck to hold the bar stock as it fed through the live center opening of the lathe. 6) He set the turret feed stops to limit the operation of each tool so that the specified dimensions would be produced. 7) He selected the appropriate spindle and feed speeds for each operation and adjusted the control levers so as to obtain them. 8) He moved the cutting tools to position for trial cuts by hand feed and then engaged the power feeds. 9) He withdrew the turrets from working position after each operation and indexed the turret so as to present the appropriate tool for the next step in the operation. 10) He inspected the trial piece carefully, measuring all dimensions to make sure that tolerances were met. 11) He instructed the machinist helper as to his duties in this particular situation. 12) He checked the helper's performance before reporting back to the machine shop foreman that his turret-lathe setup assignment was completed.[4]

[4] See *ibid.*, pages 161–164.

3. TOM McCARTHY FOREMAN [5]

Tom McCarthy, Central High '26, is an important member of the management team of G.E. He supervises Grace Stolski and 63 other assembly workers on TV line 4 in the receiver building at Electronics Park. Of course, Tom has four group leaders to aid in direct supervision, but the burden of responsibility for managing TV line 4 centers rather specifically on him. Thus, if praise is merited for high quality and quantity, Tom gets it from top management. On the other hand, if production bogs down on the assembly line, Tom "gets it" too. Foreman McCarthy is accepted without question by the company, the union, and the employees as the man to see about the affairs of TV line 4 in the receiver building.

Just who is Tom McCarthy, this important lineman on the G.E. management team? A brief review of Tom's background and experience may serve to bring out the man behind the foreman title. As a father of six who has long shared a 3-family house with groups of close relatives, Tom has made it abundantly clear that he likes "people" as well as children. A heavy-set man in his middle 40's, Tom McCarthy possesses qualities of workmanship and perseverance developed through a long career of hard labor. Tom graduated from high school and started his apprenticeship in industry during the serene years of Coolidge prosperity. He started as a toolroom boy in the plant of the Franklin Motor Car Company in Syracuse. Tom's general alertness and eagerness to learn had marked him from the start. He was transferred from one assembly job to another, until he had acquired a real "feel" for the automobile assembly business. At this juncture, however, the Great Depression wiped out Tom's chances to prosper as a maker of Franklin cars. He was furloughed indefinitely, and had to postpone his impending marriage as his meager savings rapidly dwindled. Nearly a year later, Tom was taken on by G.E. at the Wolf Street plant as a day laborer. He much preferred a regular job to the odd jobs plus the W.P.A., which had been his recent bill of fare.

Although major promotions did not seem probable during the lingering years of the depression, Tom at once began to school himself in the production techniques of this second industry. He accepted successive assignments in shipping and receiving, in plant transportation, and in plant maintenance as a laborer without wage increases so that he could round out his knowledge of the plant. In the middle 1930's, an able G.E. foreman in the radio assembly division selected Tom to become his assistant. With this break, he again started to climb the production ladder. The foreman trained him thoroughly in techniques of supervision and leadership over a period of several years.

World War II gave Tom his first important responsibility. He completed a Job Instructor Training (J.I.T.) course in supervision during a 2-weeks period and was immediately placed in charge of 25 men on a night-shift assembly job. Gradually the men in the group were supplanted by girls. The problems facing Tom under these new conditions shifted as well. The jobs he supervised multiplied in number, but each became simpler in routine as production expanded. Conditions of work became more important, however, as the group under him grew markedly feminine in composition. Wartime problems of day-nursery children, overseas husbands, and departed boy friends became a specialty of Tom's. Tightness in manpower and materials plus a great rise in demand caused the company to increase emphasis upon paper work by its foremen. As the U.E. union grew stronger during the course of the war, G.E. foremen had increasing reason to deal wisely with their charges in the first instance so as to block off grievance situations.

In the course of postwar reconversion the

[5] Management personnel described, other than Vice President Baker and ex-President Wilson, are composite and are not intended to portray actual individuals.

nature of Tom's job changed again. Costs came once more to the forefront, although not in the same sense as in depression days. Efficiency, rather than simple economy, was the goal toward which Tom and his fellow foremen were directed to strive. Tom felt that ratings of foremen were much more fairly achieved under these conditions than in either war or prewar days. The expectations of G.E. management regarding Tom's job as foreman were set forth in a company *General Instructions Manual.*[6] Tom's actual daily work, however, involved many detailed yet pressing problems, the majority of which were not sufficiently formalized to be covered in *General Instructions.* These day-to-day problems and experiences formed the hard core of Tom's job. They shaped his way of thinking far more than did the manual. The following incident from Tom McCarthy's voluminous personal "logbook" of workday experiences will serve to illustrate the mixture of technical and human difficulties with which he had to cope in carrying out the administrative duties connected with his foremanship.

As Tom was rushing back to his shop desk after breaking a bottleneck that developed near the head of the production line, he was intercepted by Harry Larson, the machine shop foreman, who thrust a welded TV chassis fixture into his hands.

"Will this weld ridge matter?" asked the machine shop foreman.

"I shouldn't think so," answered Tom. "Sam Reddick will know what print to use anyhow. He made the last batch for us. Why bother to weld it?"

"What do you mean 'batch'? Didn't you want a rush repair job?" fumed Larson. "Your group leader rushed over, saying 'Fix this in a hurry.'"

"He must have said 'Fix six for us, Harry,'" retorted Tom McCarthy. "Anyhow, that's what my job order called for. You should have read it. That broken fixture was just a sample so that you would be sure to pull out the right prints. Here, I'll get my copy of the order."

Before Tom could get back to Harry Larson for further recriminations, he was waylaid by a time-study man. The latter wanted to check breaking points on a study he was making in order to assure a balanced production line after the six additional fixtures that were contemplated had been added. As a 3-way discussion would take the wind out of Harry Larson's sails in this instance, the machine shop foreman stalked off with the welded fixture under his arm. A plant layout specialist who sighted Tom and the time-study man hurried over to question the wisdom of the plan tentatively agreed upon. The points he made were of sufficient importance to block the work of both the time-study man and the maintenance installation crew until they were settled. Tom and the two staff representatives quickly agreed to request a review of the plans by the production superintendent and the heads of the time-study and layout departments the next morning. Before either staff man could explain the problem completely to Tom, Grace Stolski rushed over for a requisition to cover spare parts needed by the girls in her section of the line. She apparently had delayed procuring the parts until a shortage threatened to bottleneck the assembly line.

Any one of these problems alone Tom McCarthy would have handled with relish. Yet their cumulative impact placed heavy pressure on him. They became a tangle of interacting events calling for simultaneous but conflicting action by the foreman, who was caught in the middle. As Tom started through one problem maze with a particular set of signals in mind, a second, and then a third, unrelated occurrence typically became superimposed upon the original situation, forcing him time and again to alter his mental set. When animals are placed experimentally in similar situations, the result is typically frustration and neurosis. With Tom, who was hardened to the heavy demands placed upon leadership, the

[6] See General Electric Company, *General Instructions Manual* (1950).

result was a combination of inward anxiety and outward gruffness, spiced by an occasional burst of seemingly unaccountable "temper."

Tom McCarthy was "in the middle" in other important ways as well. In normal times, he was accepted unequivocally by management as the company's representative on the production "firing line." At the same time, he was looked upon by the great majority of his assembly workers as a valued friend and adviser. In times of crisis, though, these dual roles were almost bound to conflict for a conscientious foreman, such as McCarthy. In a short-run sense, they were, in practice, irreconcilable. With increasing frequency during recent years, Tom had found himself pinned down by cross-fire in the "no-man's-land" of industrial strife. He was in no sense an impartial referee, but rather a poorly-regarded neutral outcast from both contending camps. In such "times of decision," he was a study in indecision.

Tom drew this trouble upon himself in large part by not taking a firm and open stand in his day-to-day relationships with his workers. The girls frequently appealed to him as an older man to settle arguments that they carried on as they worked. Tom sometimes found himself giving voice to his own personal views about business, about politics, about ethics, and about intergroup relations at such times. His views sometimes were quite different from those which the company's community relations department might have expounded on similar issues if they had specifically affected G.E. The girls unconsciously placed considerable weight on Tom's opinions in deference to his known capabilities, both as a production worker and as a straight-forward thinker. Moreover, Tom knew each girl well from studying her characteristics on the job and from studying her personnel record. Close understandings tended to develop between each individual worker and her boss as well as between the employees as a group and their foreman.

Tom's methods of enforcing discipline were less than awe-inspiring. He knew each girl so well that he did not think it necessary to "bawl out" anyone either publicly or privately. If a difficulty persisted, he would "speak to the girl," using a dry reprimand to make his point without "taking the heart out of her." Tom's six children at home had long since catalogued the phrases their father employed in carrying out this technique, and knew just how far they dared to go. The assembly girls reacted similarly to the factory version. In both cases, however, basic affection for Tom normally made up for his shortcomings as a disciplinarian.

Yet in periods of great pressure, the "front line" role of the foreman was naturally stressed by those in control of company policy. Orders then came down for Tom to get better quality or greater quantity out of his group. In an effort to command a direct response, Tom would abandon his customary role as a low-powered leader. He would call offending employees aside and criticize them sharply for their apparent shortcomings. This behavior, which Tom felt that management expected of him in a crisis, caused no end of confusion and irritation among the girls. They viewed Tom at this time as an unwilling tool of the management whose actions were dictated by events he could not control. Their response to Tom's crisis exhortations typically left much to be desired.

Tom's actual relationships with higher management were equally unsatisfying in certain respects. His actions were organized largely in terms of his own experiences. The higher-level line management and, more particularly, the cost accountants, time-study men, and other staff specialists had problems of a different nature, which did not tend to orient them to Tom's way of thinking. If, for instance, a half-dozen girls were out with the grippe or if the production line broke down temporarily, such events presented a real problem that Tom could see concretely. Without question, these occurrences were important and called for early action. Longer-range projects suggested by line or staff officials would clearly have to

await the solution of immediate-action problems. With higher officials who were removed from the scene, however, these occurrences appeared as paper notations, which almost seemed to be played up as excuses for lack of action. "Normal" production on TV assembly line 4 was largely assumed by higher management, whereas with foreman Tom McCarthy it was an achievement necessitating the surmounting of numerous obstacles that arose from day to day.[7]

Whenever Tom felt that he was being "hounded" unreasonably by staff specialists and higher-ups, he found satisfaction in talking over the particular problem involved with his immediate superior, the receiver building production superintendent. Tom's boss did much to cut the foreman's problems down to size. He correlated the various demands of line and staff personnel upon Tom's time and facilities and resisted what he believed to be untimely or unreasonable requests. He was able to communicate Tom's worries and suggestions up the line and could translate messages and orders coming down the line into terms which made sense to Tom. In fact, it required a top-notch production superintendent, such as John Evans, to make Tom's foremanship position tenable.

4. *JOHN EVANS—PRODUCTION SUPERINTENDENT* [8]

Appointment to the position of production superintendent in the receiver building represented an important step forward for John Evans, whose relatively brief career with the company already had been distinguished by a series of significant promotions. Although he was still an undergraduate in engineering college when war broke out in Europe in 1939, John was able to complete that course of study and to add a graduate degree in business administration as well before going on active duty as an army engineer. He put in three arduous years of overseas service in the European theater, from the landings at Casablanca to the occupation of Berlin, and was enroute to the Pacific when news came of the surrender in Tokyo Bay. Although young and single, John, nevertheless, had enough demobilization points from his overseas battle service to warrant an early discharge. By January 1946, he was already on the G.E. payroll as an electronics engineer.

John had great difficulty in deciding between a career in laboratory research and a career in factory production. The company indicated a willingness to launch him along either avenue, despite the fact that his technical degree represented undergraduate training alone. His wartime activity in communications and electronics had provided valuable supplementary experience in these two rapidly expanding fields. After much reflection, John decided to capitalize upon his business training and his military leadership experience by choosing a career on the production line itself.

Although he did not attend formal classes, John was regarded as being in a management training status during the remainder of 1946. John had a brief tour of duty in an engineering capacity with a group that was completing a military communications equipment order at the Thompson Road plant. He was then given temporary assignments in rapid succession in the purchasing, production control, time-and-motion study, personnel, and controller's departments. In each instance, John's main task was to familiarize himself with the purposes and procedures of the department itself and to become acquainted with its personnel.

The first "working" position John held, and in which he actually began to earn his

[7] For an excellent study in this general field see D. N. Ulrich, D. R. Booz, and P. R. Lawrence, *Management Behavior and Foreman Attitude.* Boston: Division of Research, Harvard Business School, 1950.

[8] Management personnel described, other than Vice President Baker and ex-President Wilson, are composite and are not intended to portray actual individuals.

pay, was that of assistant foreman of a radio assembly line in the newly-opened Electronics Park plant during the summer of 1947. When the production lines began to multiply shortly thereafter, John became a foreman in his own right. Although he was by a wide margin the youngest supervisor in the Park at that time, his excellent college and graduate training, his military experience, and his solid grounding in G.E. operations enabled him to overcome human problems arising from this situation in short order. He was known as a popular "foreman's foreman," as well as a man who could get along well with top management and with his employees. When the position of production superintendent in the receiver building became vacant rather suddenly one spring in the early 1950's, John stood almost alone as the insider candidate for this important post.

John's job as production superintendent involved a delicate balancing of technical and human considerations at an intermediate level within a large organization. Technical competence and sound business judgment in the production field were of course assumed by top management in filling this middle management post. The factor that won the job for John over other insiders with longer service and over an imposing array of outside talent, however, was his excellent "human relations" record as an administrator. The two incidents following illustrate the importance of the human factor in John's new job as production superintendent.

A few months after John assumed his managerial post, Charlie Hawks, one of his best foremen, had a serious run-in with two equally valuable time-study men. Hawks had selected Bernard Shaparo, a rather eccentric young man from a labor gang, for training as a punch-press operator. When this move worked out well, the foreman upgraded the young man a second time by awarding him a key position in a group of operatives that was stamping out TV chassis on a production-line basis through use of new methods. Repeated difficulties unaccountably developed in the execution of planned operations, despite thorough methods analysis and balancing of operations by the time-study staff. The group bonus was consistently lost by the men even during the third week of operation. Several of the operators who had been carefully selected for this new task were understandably disgruntled at the unfavorable turn of events. A repeat time-study analysis by the two specialists who had set up the line sequence brought out the fact that Shaparo, the foreman's protégé, was falling seriously below standard performance, thus becoming a bottleneck for the entire group. After working individually with the young man for several hours in a vain effort to develop rhythm and speed, the two time-study men gave up hope. They requested that Hawks remove the Shaparo boy from his post and replace him by a more experienced operative.

The foreman rebelled both at the suggestion and at the challenge to his prerogatives represented by it. In a fit of anger he rejected the time study itself as the basis for organizing the line. The time-study men then threatened to report obstruction to their department head and through channels to top management if need be. At this juncture, Hawks reported the episode to Evans so that the production superintendent would be alerted for an interdepartmental squabble. John realized the extreme to which the dispute had already progressed when Hawks flatly stated that, if Shaparo were removed by the time-study men, his own resignation as foreman would be part of the same package.

John assured his irate foreman that he would look into the facts of the case at once and work toward a solution that the foreman could accept. He asked Hawks to come to him with future problems, however, before the issues were so sharply drawn.

Upon checking the time-study data with the supervisor of the time-study department, John satisfied himself that the study was valid and that the standard was fair. He then discussed with the time-study

supervisor the human problem that had arisen in this instance. Both the time-study men and the foreman were seen to have been at fault. John and the supervisor proceeded to work out an interim manpower arrangement, which temporarily assigned two men to the critical job heretofore performed by Shaparo alone. They set a report date, however, after which one man would be expected to have developed the knack necessary to keep up with the production flow.

When assured of this degree of backing, foreman Hawks had Shaparo stay after work to develop added facility at the task. Moreover, he trained one of his experienced utility workers to handle this particular operation on a stand-by basis as needed. This move turned out particularly well, for the utility worker was required to perform this operation full-time a month later when a second line was set up to meet increased demand. Bernard Shaparo and the entire first crew were consistently exceeding standard well before the deadline date specified by the two supervisors.

A second type of "human problem" John Evans faced as production superintendent was concerned with the selection of new supervisory personnel. When one of the weaker foremen left the company to accept a position with a small business firm that manufactured radios under license from G.E., Evans decided to reorganize the foreman's department somewhat before filling the vacant position. He pulled together physically within the plant what had been three scattered subassembly operations, plus a main assembly line. This technical improvement in layout had previously been deferred by John's predecessor and by John himself because of the borderline supervisory capacity of the then incumbent foreman.

The departure of this particular foreman did not automatically solve the personnel situation. The assistant foreman of the main assembly line in question had been selected and trained by the departing foreman. He was definitely not the man for the new job. The group leaders of the three subassembly lines were all active candidates for promotion to foreman, either in the new line or in the departments to which their subassembly operations had heretofore been attached for administrative purposes. In fact, one of John's difficult decisions at this time was still that of determining whether the technical gains of an integrated production line (including, for instance, reduced handling of materials during assembly, reduced storage and transportation, reduced difficulty of liaison among supervisors, inspectors, and record-keepers, and establishment of a single, over-all control for balanced operations) would be outweighed by the organizational changes necessitated thereby.

Though doubtful about the short-run benefits that might actually be realized, John decided that the long-run gains to be had from the move merited the change. As to timing, he felt that the situation would only become more rigid if further delayed. John, therefore, announced the proposed change at a regular weekly staff meeting attended by foremen and group leaders. He was gratified to receive active support from foremen of several related assembly lines, in addition to the retiring foreman who commented dryly that the change was long overdue. John then stated that he wished to have all regular foremen, plus the group leaders who would be immediately concerned, stay on after the meeting to discuss this change at greater length.

After setting the stage, John permitted the departing foreman to carry the primary burden of exploring the problems that would be faced under the new arrangement. The foreman's competence had never been questioned along technical lines, so his weaknesses did not come to the fore during this discussion with supervisors alone. Under John's guidance, the discussion pinpointed the need for a new foreman who would possess broad training from the outset in the problems of the main assembly, as well as of the three subassemblies.

The assistant foreman in the department concerned had not been trained in the prob-

lems of the subassemblies. The three subassembly leaders had not been trained in the problems of the main line or of the related subassemblies under the departing foreman. John was, therefore, able to name as acting foreman an assistant foreman from another related department. This acting foreman had been trained by one of John's top foremen. His previous job involved a main line and several component lines with problems similar to the one in question. The new acting foreman had greater seniority with the company than the three subassembly men, but was junior in length of service to his fellow assistant foreman. John transferred the assistant foreman of this assembly line to a new job in production control for military orders. In this post, he would deal less directly with groups of people.

After a 6-weeks' trial, John named the acting foreman to the permanent post. His three subassembly leaders were interviewed individually by John before the move was announced. Their future training and their long-run prospects were discussed with them to their evident satisfaction. Appropriate upward salary adjustments were made in the cases of the three subassembly leaders, as well as of the two assistant foremen who were moved to new posts. Before formalizing his action, John had, of course, sought and obtained the approval of his boss, the receiver division manager, who was given wide latitude for decision-making by Vice President Walter R. G. Baker.

5. VICE PRESIDENT WALTER R. G. BAKER, GENERAL MANAGER

The receiver division manager's boss, and the boss of 11,000 other employees at Electronics Park, as well as great numbers of additional employees in a half dozen Electronics Department plants scattered throughout the East, is Walter R. G. Baker. Dr. Baker is vice president in charge of electronics for the entire General Electric Company. He doubles as general manager of the great Electronics Park plant as well. The mere listing of plants and employees under him would convince a reader that Dr. Baker must be a busy executive indeed. In addition to his line-supervisory assignments, Dr. Baker has retained a great interest in long-range research on problems cutting across the entire field of radio, television, and electronics. For he personally played a prominent role in G.E. and R.C.A. laboratory research during the formative years in the evolution of these still young applied sciences.

Walter Ransom Gail Baker was born in Lockport, New York, in 1892. He tinkered at home-electricity and wireless telegraphy experiments while still a schoolboy. Later he worked his way through Union College in Schenectady, receiving his bachelor's degree in electrical engineering in 1916. Although Baker started his engineering career with G.E. immediately upon graduation in 1916, he continued to study part-time for his master's degree at Union. He was awarded an M.E.M. degree upon completing his graduate engineering studies in 1918.

During 1917-18, young Baker played an important research role in G.E.'s development of wartime radio for the government. Later, under his supervision, three G.E. broadcast transmitters were designed, and the pioneer South Schenectady development laboratory was laid out and built. He became managing engineer of G.E.'s booming radio department in 1928 at the age of 36. His achievement in this post from 1928 to 1930 earned for him the position of vice president in charge of manufacturing and engineering at the big Camden, New Jersey, plant of the Radio Corporation of America, which was still closely affiliated with G.E. at that time.

Baker continued to win widespread recognition for his radio research and development achievements during the early 1930's. In 1935, his alma mater recognized this success by voting its already distinguished 43-year-old alumnus an honorary doctor of science degree. The next year newly-titled Dr. Baker was wooed back from R.C.A. by G.E. as head of its radio department, with full responsibility for engineering, manu-

facturing, and sales. In 1939, he was named manager of the newly-formed radio and television department. Since 1941, he has been a vice president of G.E. with responsibility for its vast electronics program. Since 1947, he has also been general manager of G.E.'s Electronics Park plant, in whose origin and development he had played a prominent part.

During the period 1942–44, Dr. Baker achieved national prominence as a scientist and an administrator by serving effectively as chairman of the Radio Technical Planning Board. This body surveyed the entire airwave spectrum for the industry and for the Federal Communications Commission to prepare the groundwork for a new allocation of the airwaves in 1944. The press likened his task to that of a housewife attempting to divide one apple pie equitably among a roomful of hungry children. Baker and his planning board had to consider, at length, the claims of 17 categories of competing wireless communication media, including, among others, standard broadcasting, FM, TV, facsimile, maritime, aviation, international, coastal, mobile, emergency, public, and amateur services. A much-publicized battle between FM and TV for ultra-high frequency allocations served as a main event among a host of lesser battles. Chairman Baker justified his reputation as "a scientist with a genius for organization" by forming nearly a score of panels, each manned by leading experts in a single field, to hear the corresponding interests submit their arguments and appeals. The chairman then managed to settle a series of acrimonious interpanel disputes in time to present a full-agreement report to F.C.C. as it opened its September 1944 airwave spectrum hearings. Dr. Baker asserted his belief that "if the Radio Technical Planning Board intelligently presents a clear-cut plan of what industry proposes, we will in all probability get just what we want." After compiling 5,000 pages of evidence during six weeks of hearings, the F.C.C. made allocations along the basic lines recommended by Baker's committee. Chairman Baker was thus instrumental in setting the fundamental framework for postwar electronics competition within and among the various media of communication.[9]

Let us now turn to the main jobs of this G.E. official who commands ready respect for his ideas on the national scene. As noted earlier, Dr. Baker's position with G.E. has twin aspects. As vice president in charge of electronics he is heavily involved in policy-making and in problem solving for the large and rapidly growing G.E. electronics program. He heads the sizeable line and staff organization that carries on electronics research, manufacturing, and sales. He must correctly appraise the needs of this group and present them to central management in New York and Schenectady. He must also interpret to his subordinates the essence of the communications channeled down from central management. Although this vice-presidential job has many important ramifications, let us shift away from it at this point in order to focus more closely upon the job of Dr. Baker as general manager of Electronics Park in Syracuse.

As general manager of Electronics Park, one of Dr. Baker's chief responsibilities is that of preparing proposals as to general plant policies for submission to central management. He must also direct his staff in the preparation of factual data and analytical material, so that the central executives and board members can arrive at informed judgments. A second main responsibility that he must shoulder is that of planning the execution of policies by his own management staff after they are approved by or initiated by central management. To ensure competency in the execution of policies, he must concern himself, thirdly, with the selection, training, and guidance of key management personnel to head various Electronics Park divisions. A fourth responsibility of the general manager is that of molding his employees into a smooth-working team with

[9] "Spectrum-Splitter," *Business Week*, No. 786, page 30. September 23, 1944.

integration of activities and coordination of effort. In order to measure progress and to be sensitive to developing needs, he must establish, fifthly, systems of written, verbal, and visual controls, which will yield readily the critical accounting and statistical data that management needs as a basis for current action. Sixthly, he must continually be alert to changing conditions and must reappraise the adequacy of existing policies and procedures in light of the evolving situation. The general manager is continually working with plant, equipment, materials, and products *through* people. He must be adept at organizing human beings for collective effort or else his knowledge of technical processes will prove of little avail. He must never let current success engender complacency either in himself or in his organization, because the forces of change soon undermine any rigidly set position.

A typical problem confronting the Electronics Park management team operating under Baker is that of directing the planning of a new TV line. Within the decentralized Electronics Park organization, major responsibility for actual execution of this particular operation would devolve upon the manager of the receiver division. Receiver-division executives must focus their thinking at least six months to a year ahead of the actual introduction date of the new model. The receiver manager must develop an organization capable of solving this problem through use of definite procedures. Questions of what, how, and how many arise all along the line. In this instance, the industrial design group within the receiver division originates a proposed new design. The engineering group considers whether or not modifications are desirable in the basic chassis. Together, the designers and the engineers make a model of each type of set to be included in the new line. At this juncture, the sales department reviews the marketing situation and recommends that certain retail price objectives be set at which level particular models in the line will reach the consumer. This figure is worked back by the manufacturing department into material and labor costs, which will leave adequate margin for overhead and profits. Sales then decides whether to accept or reject each proposed model. If it rejects a model, it may be for reasons of design, color of cabinet, or any one or more of a variety of reasons.

Once sales accepts a model, the production group in the receiver division takes the approved drawings as a basis for manufacture. It asks the purchasing department to arrange to get materials in stock. It schedules actual production. If important improvements crop up during the process of manufacture, sales looks them over. Sales may decide to change the set so as to give the public an improved model, or it may decide that the improvement does not merit the major shifts required to bring it about in this model. All of these groups in this complex process of developing a new TV line operate under the watchful eye of their common superior, the receiver-division manager. If all goes well, the receiver-division manager need only nod his general approval. If unforeseen difficulties arise, or if organizational frictions develop, however, swift action may be called for on the part of this official. Both in crisis situations and over the long steady pull of the production-distribution cycle, the strengths and weaknesses of the receiver-division manager may be brought forth for measurement by his own superior—Dr. Baker, who in turn is responsible to the central management of the firm.

6. *CHARLES EDWARD WILSON—G. E. PRESIDENT, 1940–1950* [10]

Swinging our sights away from the production line and up to the very pinnacle of the towering G.E. management organiza-

[10] Charles E. Wilson has been selected for discussion at this time rather than his successor, Ralph J. Cordiner, for the reason that G.E. at midcentury still reflected the policies of Wilson's ten-year administration. Cordiner was a key executive under Wilson, to be sure, but the new Cordiner regime was only two weeks old at the midcentury mark, which is regarded as a benchmark date in this text.

tion, let us seek out those personal or job characteristics that distinguished G.E.'s well-known ex-President, Charles E. Wilson, from G.E.'s "unknown" production men, John Evans and Tom McCarthy. We shall not be surprised to learn that the differences in jobs to be performed at the two levels are tremendous. We might well be startled, however, at the many personal qualities and personal interests the occupants of the top and the bottom rungs in the G.E. management ladder had in common.

Charles Edward Wilson's background and experience, when captured on a G.E. per-



Figure 6-5: Charles E. Wilson, G. E. President, 1940-1950, in old-time auto costume. (*Taken for LIFE by Photographer Jerry Cooke (c) TIME, Inc.*)

sonnel data card, strongly resembled the items listed by McCarthy and thousands of other G.E. foremen. These data contrasted markedly, on the other hand, with the background and training items that might be listed by all but a handful of G.E.'s thousands of management officials and professional engineers. Yet both groups—indeed, all important groups—were quick to claim Charlie Wilson as their own. This ability to "belong" to, and to capture the respect of, many diverse groups both within and without the company was one of the truly invaluable attributes of G.E.'s vigorous chief executive of the 1940's.

Wilson's career actually follows the traditional storybook pattern of the successful American businessman. He was born in 1886 in "Hell's Kitchen," a slum district on the lower West Side of New York City. His father, who had been crippled during a mob panic at the opening of the Brooklyn Bridge three years before his son's birth, never completely recovered his health. He died when Charlie was but three years old. Since his mother had to work long hours to support the two of them, Charlie stayed in school only until his twelfth birthday.

In 1899, he quit P.S. 32 to take a job as office boy at $3 a week in the Sprague Electrical Works, a subsidiary of G.E. Within two years, young Charlie received a promotion for merit from office boy to assistant shipping clerk. This change in status was accompanied by a 167 per cent increase in salary—to $8 for a 60-hour week. During this period of employment at the Sprague Works, Charlie added significantly to his formal schooling by taking courses in bookkeeping, stenography, shop practice, and physics, which were offered at New York City night schools. While still in adolescence, Charlie was made a factory hand. Subsequently, through holding down a variety of shop jobs, he acquired a good deal of practical production know-how. At the outbreak of war in Europe in 1914, 26-year-old Charles Wilson held the impressive title of assistant general superintendent of the Sprague Works. In this capacity, he received sales assignments in addition to his engineering and production duties.

Shortly after the close of World War I, Charlie Wilson received a further promotion to the post of assistant general manager of two geographically separated plants in the G.E. apparatus division. In 1923, he moved with other key personnel of one of the two plants to join an amalgamated unit at Bridgeport, Connecticut, which was known as the Bridgeport Works. Within two years, Charlie stepped up from the post of managing engineer to the assistant gen-

eral managership of the large, sprawling Bridgeport Works.

During these middle years of the 1920's, new lines of mass-produced home appliances, such as washers, irons, and electric fans, were added to the traditional G.E. heavy industrial apparatus lines, which included motors, generators, and massive turbines. Charlie heartily approved of this move to tap the direct consumer market. He soon made a name for himself within the company as a G.E. home-appliances man. In 1928, he was named assistant to the vice president in charge of the company's rapidly-expanding merchandising department. As the Great Depression broke, Charlie was stepped up again to the post of vice president and general manager of Bridgeport operations. He was later placed in charge of all G.E. appliances. New and rapidly-expanding appliance lines were instrumental in maintaining profitable operations for G.E. as a whole throughout the depression of the 1930's. His reputation was considerably enhanced during this period by his successful handling of a multitude of difficult appliance problems.

In 1937, 65-year-old President Gerard Swope of G.E. brought 51-year-old Charles Edward Wilson back to New York in a new post that never existed before—that of executive vice president. At the same time, Swope and 63-year-old Board Chairman Owen D. Young selected 40-year-old Philip Reed, holder of degrees in both engineering and law, to serve in a training capacity as assistant to the president. It became apparent to G.E. insiders that Wilson and Reed were being groomed to replace Swope and Young as a third generation G.E. top-management team. In order to afford the G.E. board of directors an opportunity to judge their choices, Swope and Young required Wilson and Reed to report at board meetings upon several occasions concerning special problems falling within their respective jurisdictions. Wilson, for example, would be asked to argue for or against a proposed new motor line or a new plant investment. Reed would be asked to advise upon a proposed patent-license arrangement or a real-estate purchase. President Swope also took his two protégés along on trips to a string of big G.E. plants. He introduced them to selected groups of G.E. managers and engineers amid broad hints as to his succession plan.

Although Wilson was not a "Test man" (a graduate of G.E.'s technical training school), an engineer, or even a college graduate, he did have important attributes that fitted him for this high G.E. post. As a 40-year G.E. veteran, first of the apparatus business and then of the appliance business, Charlie was an operating man with solid grounding in G.E. methods and objectives. He also had won thousands of friends within the organization. He was a vigorous man, well over six feet tall, muscular, erect, and capable of working at high pitch for days and weeks on end. Even in times of stress, he was reputed to be "about as nervous as a locomotive." He not only came from, but strongly suggested, the rank-and-file of G.E. workers. Probable acceptability to labor was becoming a consideration of increasing importance in the selection of executives at the start of the decade of the 1940's.[11]

The two "unknowns," Wilson and Reed, took over the duties of Swope and Young, two of America's best-known industrialists, on January 1, 1940. They were expected to continue the dual-control system of management that their predecessors had devised. The president served as G.E.'s chief executive officer—the man who gives the orders. His primary duties included the framing and execution of policies to guide the managers of G.E.'s 100-odd operating plants and of its far-flung distribution outlets.

In a going concern, the new president must reappraise earlier decisions and re-

[11] "Mr. Wilson at Work," *Fortune,* (Copyright by *Time, Inc.*) Vol. XXXV, No. 5, pages 120–3. May 1947.

state company policies in light of new conditions. Key decisions continually confronting top management pertain to a) setting volumes of output, b) pricing products, c) controlling costs, d) meeting delivery promises, e) selecting and training personnel, f) coordinating major departments to function as a unified whole, g) providing for financial needs, h) maintaining industrial peace, i) providing for product research and development, and j) building good relations with outside groups, such as customers, suppliers, competitors, the government, the community, and the general public. Thousands of important decisions falling in these and other categories repeatedly confront a business executive during the course of his administration.

The chairman of the board of directors, following the pattern set by Young, had primary responsibility for finance, for legal matters, for public relations, and for foresight as to the future impact of encroaching events on G.E.'s business affairs. In meeting his responsibilities under this last category, for instance, the board chairman might initiate studies into the possible impact of pending legislation at home and abroad, of a Supreme Court decision, or of a change in regime in a far-off land. In addition to these direct policy-setting duties, the board chairman had the responsibility of providing leadership for the board of directors in carrying out its important task of supervising management. Upon occasion, he might initiate board action to select new operating officers at the top level, to determine the general policies that are to guide their conduct, and to appraise the effectiveness of their performance.[12]

Wilson inherited the management of a company that reflected both achievements and shortcomings of the 18-year Gerard Swope regime, which had preceded him. The company had grown mightily during the previous two decades. In 1940 it possessed assets valued at $375 million. The workforce numbered 67,000. Fully 210,000 individuals were company stockholders. All Americans plus a sizeable proportion of the world's several billion other inhabitants comprised the actual and potential market of this single firm, which accounted for a sizeable proportion of the total United States electrical business.

At the time when the team of Swope and Young took over the reins of G.E. in 1922 from the first president of the firm, Charles E. Coffin, the modern concept of corporation management — that of management trusteeship, subject to the general good of the stockholders, labor, and the public—was just emerging. Agreeing upon this concept as their management philosophy, Swope and Young divided top management functions in the manner outlined earlier. Young served his corporation with great effectiveness by "not getting too close to it." He kept up broad contacts outside of G.E. proper. "To be known," stated Owen D. Young, "is quite as important a part of management as *knowing*." He was, of course, world renowned as a statesman, because of his role in the Young and Dawes plans for German reparations. He also served on the Federal Reserve Board, made numerous commencement addresses, and was recipient of 25 honorary degrees as part of the process of being known and liked.

President Swope, on the other hand, though universally respected, remained somewhat aloof from his business associates, as well as from the community at large. His dynamic approach and brilliant mind enabled him to dominate the G.E. organization. He followed relentlessly one basic managerial precept in all his business dealings, namely, "Analyze, organize, deputize, and supervise." His precise manner and his inability to relax as the occasion may demand held back his associates. By way of illustration, it is said that G.E. personnel learned quickly not to remark casually, "A fine day, Mr. Swope," lest he snap back,

[12] "G.E.'s Third Generation: Wilson and Reed," *Fortune* (Copyright by *Time, Inc.*) Vol. XXI, No. 1, pages 68-9. January 1940.

"Fine? In what way is it fine?" [13] He would reputedly appear for necessary civic functions at the precise moment designated for his own speech and leave again shortly after its delivery. Under President Swope's highly personalized management G.E. developed but slowly as an organization, despite its impressive output and earnings record. There was a definite lack of systematized management below the presidential level. Numerous advisory committees, rather than single responsible department heads, exercised managerial powers. On the other hand, a man-with-an-idea, who somehow put it across to the president, might be given a special new title and authority cutting across previously established lines in order to carry out the idea. Even directors' meetings tended to be rather perfunctory under the Swope regime.

There is evidence indicating that, near the end of the 1930's, President Swope himself may have desired to change the G.E. management design. The company had gradually edged into the appliances line under Swope's urging, but had never shifted its organization pattern to take this fundamental change into account. High company officers, concentrating respectively upon engineering, production, and sales, were still supposed to cover all G.E. products, including the distinctly contrasting apparatus and appliance fields.

In the appliance field itself, a haphazard arrangement prevailed. For example, G.E. refrigerator cabinets were made in Erie, freezing units in Fort Wayne, the motor compressor units in Schenectady, the timing connections in Lynn, and the whole unit was assembled in Erie. The degree of coordination necessitated by the scattered location of these manufacturing centers for a single basic product made the operation an inefficient and costly one, despite the engineering excellence of the G.E. refrigerator and its strong sales appeal.

This pattern was repeated in the case of other smaller appliances, such as toasters, waffle irons, and electric clocks. Here G.E. competed directly with a number of smaller but more highly integrated concerns, each of which specialized in the engineering, production, and sale of a small group of related products. As G.E. came to do 30 per cent of its gross business in the appliance field near the end of the 1930's, President Swope evidently decided that the time had come to implement organizational changes in this important field. He named appliance man Charles Edward Wilson to the new post of executive vice president in 1938, and authorized him to initiate within G.E. a thoroughgoing survey.

Charlie Wilson selected key men from each of the main G.E. departments to serve during 1939 on what he labeled the postwar planning committee. In due course, this committee concluded that G.E.'s large-scale, far-flung operations called for adherence to two over-all principles, namely, "in management, decentralization; and in production, diversification and specialization." [14] It was felt that implementation of these principles would result in important benefits for the company, including 1) broader and more intensive research, 2) increased and improved engineering and manufacturing activity, and 3) a more efficient sales and distribution system. Wilson was dedicated to these principles as he took over the presidency in 1940. Profiting from the 2-year start that retiring President Swope had given him in the executive vice president post, the new chief executive was able to put the new concept of G.E. operation into effect on a broad scale before the full impact of war production demands put the G.E. organization to its greatest test.

The half-century old, red brick G.E. executive headquarters building at Schenectady continued to resemble outwardly a typical university classroom building during

[13] "G.E.'s Third Generation Wilson and Reed," *Fortune*, (Copyright by *Time, Inc.*) Vol. XXI, No. 1, page 69. January 1940.

[14] "Mr. Wilson at Work," *Fortune*, (Copyright by *Time, Inc.*) Vol. XXXV, No. 5, pages 120–123. May 1947.

the peak of wartime planning activity in 1942. The junior, middle, and senior executives working there at desks were not unlike an engineering or business administration faculty in appearance—or in college degrees held. Yet the organization operated by this calm and peaceful group was undergoing more radical changes in two short years than it had in the previous 20 years. Sales, for instance, climbed to a $1 billion-a-year rate, triple the prewar "norm." Moreover, G.E. products were almost completely altered in their nature. Practically all household appliances were now replaced by highly complex military devices. Production of massive pieces of apparatus, such as the turbosuperchargers used in large ships, increased in volume several hundredfold. The increase in annual production of marine turbine and gear sets alone amounted to more than G.E.'s total billings in any year from 1931 to 1936. During this great period of all-out war production, Wilson wisely had G.E. concentrate on the most highly-engineered military products, such as electronic devices, torpedoes, and gas turbines. He wished to keep tuning up G.E.'s technical muscles, rather than adopt the easy and more profitable course of turning out huge volumes of output of but a few basic product types. G.E. achieved the distinction of producing more different war products than any other American company.[15]

In September 1942, as G.E.'s war-production machine began to move ahead with wide-open throttle, President Franklin D. Roosevelt, on Donald Nelson's urging, drafted Wilson to serve as top production man on the nation's War Production Board. As Wilson had been in office less than three years at this time, G.E.'s directors felt strongly that he would be much more useful to the war effort in Schenectady. The W.P.B. also had its problems, however, and a man of Wilson's caliber was needed desperately to fill a vacuum in the W.P.B.'s production-control program. The President correctly labeled Wilson "one of the ablest production executives in the country" in tapping him for the Washington post. Rather than embarrass his company through continued connections while a government man, Charles Wilson, who was not wealthy, resigned his $175,000-a-year chief executive's post. His new Washington position paid $8,000 a year. Almost immediately Wilson joined battle with armed-services representatives over the vital issue of jurisdiction between the military and W.P.B. Wilson was determined to exercise W.P.B.'s right to "central review and control of scheduling" to check conflicts among various war programs and to end "the confused scramble for facilities, materials, and labor" that he found. The embattled parties agreed upon a truce only when President Roosevelt threatened to lock them in a "foodless room" until they came to terms.

As a result of this struggle, Wilson was made chairman of a Production Executive Committee composed of generals and admirals plus War Production Committee representatives. As chairman, Wilson was given power of decision concerning production and scheduling for the entire war effort. He engaged several hundred analysts to study army and navy programs so as to weigh them against available facilities, materials, and manpower. He organized "task force" committees within the individual industries dealing in war components so as to speed up the procurement process. Wilson's deputy later stated that this detailed planning and scheduling resolved 90 per cent of anticipated conflicts without blocking any of the programs under study.[16] Wilson's outstanding performance at this time was instrumental in his recall to service in 1950 to head the Office of Defense Mobilization for 15 months as the nation prepared to check Communist aggression in Europe and Asia.

Wilson returned to G.E. near the end of World War II as the firm completed a $1.4

[15] "G.E. Does It," *Fortune,* (Copyright by *Time, Inc.*) Vol. XXV, No. 3, pages 64 69. March 1942.
[16] "The War Production Board: Is It?" *Fortune,* (Copyright by *Time, Inc.*) Vol. XXVII, No. 3, pages 91–94. March 1943.

billion production year. This figure was four times G.E.'s pre-Pearl Harbor norm of $350 million. More than 100 large G.E. plants were now scattered all over the United States. The workforce was 2½ times its 1940 figure, numbering 161,000 compared with a former 67,000. Wilson quickly realized that G.E. must set its postwar sights on a billion-dollar volume, three times the peacetime figure, if the financial statements of the company were to balance out in their usual satisfactory condition. Actual sales topped the wartime peak within three years after the war's close. They had climbed to a rate in excess of $2 billion by December 1950 when Wilson left G.E. to mobilize a new "guns and butter" economy from his Washington post.

The G.E. president's executive offices are located high in a G.E.-owned, midtown-Manhattan skyscraper. This office contains a number of collectors' items, including the late Thomas Alva Edison's desk, the late Navy Secretary Knox's wartime American flag, and a hand-painted globe of the world. The office ceiling is also adorned, as befits a G.E. executive, with ultraviolet and germicidal lamps that continually give the president "the equivalent of a slow sunburn." The great question now arises as to how, even from these elevated quarters, one man can, in a 70-hour working week, become aware of the ever-changing problems confronting the mastodon company—let alone understand and solve them.

During his 10-year regime in the 1940's, Wilson actually assumed most of the functions previously handled by both ex-President Swope and former Chairman of the Board Young. Board Chairman Reed was heavily occupied with G.E.'s foreign subsidiary, International General Electric, leaving largely to the president many of the public-relations functions formerly handled by Chairman Young. Wilson was greatly aided in this function, of course, by his half century of varied industrial experience and by the great public reputation he made in wartime Washington. His tireless energy also stood him in good stead. Illustrative of the load Wilson shouldered is the remark he once made to a friend before Armistice Day: "Tomorrow is a holiday. I have only five meetings and a dinner. Guess I can just sit back and wait for the night plane to Cleveland." [17] His idea of a day of rest in some respects resembled a postman's holiday. Besides attending church services, he has been known to squeeze 36 holes of golf, a horseback ride, and a swim into a single Sunday.[18]

Wilson's design for management of G.E. was both orderly and explicit. He replaced Swope's regime of "direction" with one of "delegation." Indeed, he delegated the detailed working out of his basic organization scheme itself to a capable assistant, Ralph J. Cordiner, who served as vice president and assistant to the president before succeeding Wilson in December 1950. Wilson delegated direct authority to a score of vice presidents, each of whom represented a distinct division of the G.E. organism. He has been quoted as stating in characteristic fashion, "I don't work . . . I have twenty Vice Presidents. I piece things together. The men in the field do all the real work." [19] Of course, the crux of the president's job lies in the herculean task of "piecing things together" and weighing their significance as a guide for executive action.

Each month, Wilson surveyed and coordinated the operations of the far-flung company through the medium of seven top-level committee meetings. These all-day meetings of the budget, finance, international, executive, operations, and advisory committees, and of the board of directors itself filled the last two weeks of the president's month. The executive committee was

[17] "G.E.'s Third Generation: Wilson and Reed," *Fortune,* (Copyright by *Time, Inc.*) Vol. XXI, No. 1, page 103. January 1940.

[18] "Mr. Wilson at Work," *Fortune,* (Copyright by *Time, Inc.*) Vol. XXXV, No. 5, page 120. May 1947.

[19] *Ibid.,* page 123.

a handy, compact group, consisting of the president and board chairman, plus three other directors selected from the full 18-man board. It was used for emergency situations in which top-policy decisions were needed rapidly for interim use. The operations committee consisted principally of the eight vice presidents directly responsible for the eight great divisions of the company, namely, apparatus, appliances, lamp, electronics, air conditioning, chemicals, nucleonics, and affiliated units. The advisory committee represented a gathering of all the minds through which the president scanned the over-all activity of the whole company. It consisted of the president and board chairman, three financial officers, eight operating vice presidents, and nine other vice presidents, each of whom had his own complex area of responsibility. These areas may be listed as engineering policy, engineering and consulting, research, law and patents, purchasing, labor relations, advertising and publicity, customer relations, and affiliated companies.

The committees typically started with a general review of business results in all eight of the major divisions of the company. They then got down to specific situations and problems and to forecasts and interpretations that had bearing upon the basic statistics. Committee discussions might center upon such topics as the following: 1) Shall a new plant be established in a certain locality? What are the facts as to the dozens of considerations that must be taken into account in such a case? 2) What is the labor outlook for G.E. and for the nation? What should G.E. management do about it? 3) Is one vice president's request for an appropriation reasonable or not? What is his specific situation, and how does it compare with the relative needs of others? 4) What final decision is to be made between two rival products? What are the specific facts in the issue, and what are their basic short-run and long-run implications? These questions and pertinent materials bearing upon them come up before the committees in endless variety. A careful budgeting of committee time was requisite to keep the executive machinery flowing smoothly. The president was also advised from time to time by ten commercial vice presidents scattered around the United States geographically as extensions of the presidential eyes and ears. These officials served as titular heads of G.E. activity in their regions. As these men spent most of their time on customer relations, they reported directly to the vice president for customer relations, and only indirectly and on special occasions to the president.

The fortnight of full-time committee meetings left the president just two weeks each month to catch up with his dictation, read selected reports, make junkets out in the field, receive important visitors, deliver public addresses, and handle the myriad problems that had a way of sifting through the tightest of subpresidential buffers. Wilson insisted upon keeping a flexible calendar despite this terrific pressure. He also managed to reserve sizeable blocs of hours for basic thinking on problems of long-range significance for G.E. and for industrial statesmanship.

Wilson regarded himself as an employee of G.E.—in charge of statesmanship. He believed that there were great opportunities for statesmanship within the sphere of competence of the great company itself. His job called for a high degree of imagination and concern, not only technically and commercially, but in political and human terms as well. He recognized that he was a nonspecialist of long and varied, but rather mottled, experience within a company crowded with specialists. He loved to talk matters over with colleagues. He sought advice readily and took a good deal of it. One of his great assets in these personal situations was his sincere emotional absorption with the men and machines that comprise G.E. To Wilson, the General Electric Company was genuinely "romantic," for he was in love with his company—and that is a contagious executive asset.[20]

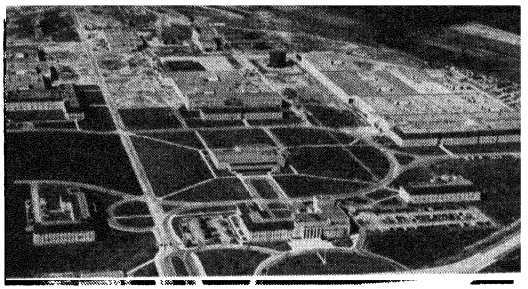
[20] *Ibid.*, pages 120–123.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	90–94	Might not new G.E. assembly workers be taught their task directly on the production line, thereby saving the expense of operating a separate learners' line?
2	90–94	Graph your impression of Grace Stolski's daily progress on a "learning curve" from 0% to 100% of normal production during her first two weeks at G.E.
3	92–94	What attitude should G.E. management take toward incessant conversation by workers on G.E. assembly lines?
4	92	Should the purposes of visits by company technicians be announced beforehand to workers on an assembly line?
5	94–97	Would a machinist who had failed as a "small businessman" make as desirable an employee as a machinist who had not gone through this experience?
6	94–97	What traits and aptitudes should be sought by an employment interviewer in selecting young men to become apprentice machinists?
7	96–97	Do you believe that the turret lathe would be more suitable than the engine lathe for a lot size of 300 guide collars? of 30? of 3? Assume 35-minute setup time and 30-second operation time for turret lathe, assume 20-minute combined setup and tool-change time and 4-minute loading and operation time for engine lathe.
8	98–101	To what extent is knowledge of automobile assembly methods transferable to problems of television assembly at General Electric?
9	98–101	In what ways do problems of supervising female assembly workers tend to differ from problems of supervising male machine shop workers?
10	98–101	In what ways might a goal of "efficiency" differ from a goal of "simple economy" in an industrial situation? Give illustrations.
11	98–101	Might a foreman reasonably insist upon a "one-at-a-time" approach to his problems of supervision?
12	98–104	What might be the effects upon the functioning of the G.E. management system of a contract provision which enabled foremen to remain active members of the I.U.E. union?
13	101–104	Give two or three illustrations of the manner in which "technical considerations" and "human considerations" tend to become intermingled in situations which might confront the production manager of a plant.
14	102–103	Evaluate John Evans' conduct as production superintendent and Charlie Hawks' conduct as foreman in the Bernard Shaparo case.
15	98–104	In general, would experience in several different departments of a business constitute sounder background for an assembly foreman than long experience in the assembly department? What experience might a desirable training and seasoning program include?
16	104–106	Should the General Electric Company set a "policy" with regard to the community service and national service activities of its 125-odd plant managers or should these matters be left to individual preference?

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
17	105–106	Describe an activity which the general manager might reasonably carry on under each of his six major areas of responsibility.
18	106	What are the basic responsibilities of each group involved in the planning of a new TV line?
19	106–113	In your opinion, what personal qualities and what events in his career led to Charles E. Wilson's selection as chief executive of G.E.? What were the major "risks" in his selection?
20	108–113	What are the major responsibilities of the chief executive of G.E.?
21	108–113	What administrative techniques did President Wilson employ and what administrative practices did he follow in order to meet his responsibilities as chief executive of G.E.?
22	110–111	In your opinion, did President Charles E. Wilson's World War II assignment pay "dividends" of sufficient importance to G.E. to offset the "risks" involved?
23	108–113	What light does General Electric's experience shed upon the feasibility of proposals heard in other quarters calling for a "unified economic command" to manage the economy as a whole?



7 Report on Electronics Park Plant and Equipment

THE VAST G.E. ELECTRONICS PARK plant is a noteworthy investment in America's future. It is built for the long run. If the short run were all-important, it must be conceded that radio-TV equipment built on a small-scale, "craft" basis could have been completed and placed in operation two or three years before the first product came off the Electronics Park assembly lines. A shop operated on a low-investment craft basis might also change its methods or alter its products more quickly and cheaply than could the high-investment, specialized G.E. assembly plant near Syracuse. Yet, the well-conceived Electronics Park development is proving a wise investment for G.E. stockholders. It will continue to "pay off" handsomely for G.E. and the nation in the long run.

GENERAL VS. SPECIAL PURPOSE PRODUCTION

A large-scale, highly-specialized production and assembly plant can accomplish certain important industrial jobs in a manner that small, general-purpose shops cannot, in their very nature, hope to equal. We would not expect craftsmen of the carriage age to match output with Ford's River Rouge plant. We do not expect craftsmen using wireless age methods to match output with G.E.'s Electronics Park. This central thought can be illustrated from one point of view by considering the cases of Sam Reddick and of Grace Stolski within the G.E. plant itself.

As an all-round machinist equipped with general-purpose machine tools, Sam is highly flexible. He and his equipment are almost as liquid as "money in the bank" with respect to shifts in demand from one product to another, as far as G.E. managers are concerned. Grace and her specialized conveyor system of production are, in many respects, like "money laid on the line" for "win, place, or show." Continual shifts in the nature of demand are the justification for Sam's existence. Abrupt shifts in the type of task expected of her would signal Grace's downfall.

A team of Graces operating turret lathes or conveyor assembly lines, nevertheless, can turn out more of a given type of product than a collection of Sams using engine lathes or other general-purpose machine tools. We may concede that Sam, as an individual machinist, is several times more valuable to a company than is Grace, as an individual assembly worker. It takes skilled

The photo at the top of the page shows an air view of Electronics Park. (*General Electric Company*)

machinists to care for plant and equipment. Their skill in turn keeps assembly workers productive. Yet, when we compare the two systems of industrial organization—a craft shop and an assembly plant—we find that the organization able to utilize our plentiful supply of Graces with their limited training through heavy investment in specialized plant and equipment can make the greater impact upon our economy.

Mass-production methods enable us to turn out quality products with relatively low-skilled employees comprising the bulk of the labor force. Moreover, once large volume output is achieved, unit costs fall quickly with results that are highly beneficial to the consumer. Such a system still utilizes the superior skills of our Sams to maintain and adjust the machinery that the less-skilled employees use. It utilizes effective foremen, such as Tom McCarthy, to supervise less-experienced employees and to control shop operations. It develops such top executives as Walter Baker, Charles Wilson, and Ralph Cordiner to guide the enterprise.

The job of a chief executive operating a large enterprise may be likened to that of a captain guiding his ocean-going freighter. In some ways it involves even greater uncertainties. Instead of operating over a known course with predictable obstacles, the "business captain" faces a task equivalent to that of delivering cargo via misty northern waters. Across his radar screen (report system) move unidentified objects, some of which are drifting icebergs (changing conditions), and some of which are rival vessels (competitors) bent on reaching port (market) before him.

Carrying out the analogy, the manager of a small shop plays a role that may be likened to that of the skipper of a small sailboat. His craft is not designed to rove the seven seas, even if equipped with an auxiliary motor. Yet, if confronted by looming obstacles, the small business skipper may quickly tack away or else lower sail and tie up to said obstacles for an exploratory look. A small, low-investment craft is flexible within its sphere of competence. The danger is great and the mortality rate is high, however, when these small business skippers venture too far from port. There would appear to be little reason for small commercial craft to leave sheltered waters knowingly, for they do not have the carrying capacity over the long pull that their large, ocean-going mates do.

The situation is reversed when the two types of vessels operate within a crowded harbor (small volume market). The large ship must be towed awkwardly to its berth. The small craft races before the wind, taking advantage of every possible opening and every shift in conditions along its course.

Returning to Sam and Grace, let us consider the necessary plant and equipment each must have in order to work effectively. Sam could operate in a small job shop anywhere in the world, and do substantially what he does now. He is valuable to G.E. but does not depend in any basic way upon G.E.'s plan of operation. The equipment Sam works with cost the company $40,000 when new during the 1940's. The specific items, their cost and age are listed on page 118. (Also see Figures 9–8 to 9–14 in Chapter 9 below for machine tool photographs.)

The machinery Sam uses is expected to be useful to G.E. for 20 years on the average. After this period, individual items will have a rather small resale value or, in certain instances, merely a scrap value as junk metal. This residual value is estimated at about $6,000. This adjustment reduces the original $40,000 figure to a net figure of $34,000, which will be used up in production during 20 years' time. Another $4,000 of this net consists of tool bits and parts, which, experience shows, wear out during an average 5-year cycle instead of a 20-year cycle. Replacing tool bits and parts thus costs G.E. an average of $800 a year. Replacing the remaining $30,000 worth of equipment over a 20-year cycle costs the company $1,500 a year on the average. G.E. must spend this approximate sum to buy

Item	*Cost When New*		*Age (yrs.)*
20″ Heavy Duty Shaper	$4,500		8
Extras, *e.g.*, power downfeed, magnetic chuck, revolving table	1,200		
Tool bits & parts	300		
Total		$6,000	
12″ Engine Lathe	$4,500		10
Extras, *e.g.*, grinder, milling attachments	1,500		
Tool bits and parts	1,000		
Total		$7,000	
20″ Drilling Machine	$750		5
Tool bits and parts	250		
Total		$1,000	
# 2 Universal Milling Machine	$8,000		3
Extras	1,000		
Cutters and parts	1,000		
Total		$10,000	
6″ Cylindrical Grinder	$6,500		12
Extras	500		
Wheels and parts	500		
Total		$7,500	
# 4 Ram-Type Turret Lathe	$6,500		10
Extras	1,000		———
Tools and parts	1,000		
Total		$8,500	
Grand Total (average age)		$40,000	8

new machinery for Sam to use if it wishes to remain in business. Some of this machinery, under good maintenance conditions, might be kept physically intact and in good working order for perhaps 50 years. New ideas arising during that period might lead to improved models, however, which will do superior work and result in operating savings to G.E. Thus G.E., typically, might be better off financially to scrap Sam's original machine tools much earlier than it would have to if the company stuck doggedly with the old equipment until it wasted away physically.

If the average age of the machine tools used becomes stabilized at around 10 years, and if tool bits and parts average 2½ years in age through actual replacement of various items from time to time, the company will carry an average investment of $23,000 on its books ($2,000 tool bits and parts, $6,000 residual value, and $15,000 machine tools and extras). This figure is 57.5 per cent of what it would cost to buy all of the equipment at once brand-new. Thus, 42.5 per cent of the original cost of this partly used-up equipment still on the books would have been listed by the company as "depreciation expense." This cost is an expense of doing business over time, just as surely as if a minute piece of metal were to be carried away by every item produced on the machine. As noted above, the annual costs would be $800 for tool bits and parts (one-fifth of $4,000) and $1,500 for machine tools (one-twentieth of $30,000, *i.e.* of $36,000 minus $6,000 residue), even though just 57.5 per cent of the original $40,000 figure remained on the company's books as assets having value.

This $23,000 sum remaining on the books represents company funds actually tied up in physical equipment. This money is not free to seek a return on its use anywhere else. If the $23,000 were not so tied up, it might be invested by the company for some other purpose and might reasonably earn a return. (We may assume the prevailing rate of interest to be 4 per cent for purposes of illustration.) By equipping Sam in the machine shop, the company is giving up a possible return of close to a thousand dollars ($920 if 4 per cent) a year as interest

Industry typically discovers new methods and new products long before a given type of equipment is physically worn out. The new discovery must be so superior to the old that it would pay the company to scrap existing equipment and methods in order to obtain the direct savings and other benefits resulting from the new operations. In this competitive world, the cost of progress, though great, is far less than the cost of failure to progress. If G.E. were to neglect research, it would shortly find itself outstripped by its commercial rivals. If a rival firm were to discover and patent an important new process, G.E. might be driven out of a particular field of operation entirely, unless it could come up with a comparable improvement of its own. A particular firm may be driven out of its market even though business, in general, is good in the economy as a whole.

General Electric sets its depreciation charges on plant and equipment at levels that, experience shows, are sufficient to charge off the company's investment during the useful life of the asset in question. It also acts quickly to implement laboratory developments. A company that keeps ahead of the field in this manner is able to write off certain developmental costs at a time when demand is heavy and supply is still light.

PLANNING FOR PRODUCTION

If the supervisor of Sam's shop knew that he would continue to receive requests for large quantities of a certain type of order, year in and year out, he might find it profitable to buy machine tools designed specifically to turn out that product in large quantities at low cost. Replacement of an engine lathe by a turret lathe would be one step in this direction. Replacement of the general purpose turret lathe by a fully automatic machine set up to do many pieces at once through simultaneous operations, or perhaps using heavy dies to form pieces instead of machining them, might be still another worthwhile step toward specialization. The labor cost per piece would be small under these conditions, but it would require savings on many, many pieces over a period of many months to offset the cost of the original investment in specialized machinery.

A job machine shop is not set up for volume business and does not seek it in competition with production-type machine shops, which have special-purpose, high-volume machinery at their disposal. A machine shop is set up for specific purposes, and within broad limits, it seeks that type of business that it is best equipped to do. In this way plant, equipment, and organization skills are used to best advantage.

The price mechanism under which production orders are allocated within our economy helps to ensure economical use of the resources at our disposal. Even in time of depression, a company in distress will not go below out-of-pocket cost (*i.e.*, direct cost in dollars that actually leave the company as payment) in bidding to obtain business. An engine-lathe owner, thus, could not outbid a turret-lathe owner for a high-volume order, even if the alternative were idleness for his machine. Instead, he must seek his own type of business, *i.e.*, a lower-volume order or one that could not be set up on a turret lathe.

Over a period of time, if a company has "sunk cost" invested in plant and equipment that are not fully utilized and if it has labor available to man them, it will attempt to alter its production setup so as to shift to more fertile fields. In the radio-TV-electronics field, we have witnessed not only vast, war-inspired shifts from home radios to electronic devices for the military, but also extensive, peacetime transitions from radio to TV capacity, from conventional record players to long-playing record machines, and from round TV picture tubes to rectangular tubes, to name but a few. These shifts are not just temporary style changes designed to lure the public into duplicate purchases. They are basic improvements arising from the all-out competition by rival companies for the consumer's dollar.

Electronics Park, itself, was planned in 1944–5 as a $10 million home for electronics products, particularly radios. By 1947, it became a $25 million plant. By 1949, it abandoned radio assembly and concentrated upon TV. By 1951, it packed more than 11,000 employees into a plant originally designed for but 5,000. Over a broad range, though at relatively heavy cost, the Electronics Park plant has exhibited a surprising degree of flexibility of development. In the open fields near Syracuse, G.E. has developed an extensive plant with modern equipment and a smoothly-functioning, human organization, which it must conserve and, within wide limits, adapt to evolving needs. Let us now review the story of the establishment of this new center for electronics activity.

ESTABLISHMENT OF PLANT [1]

Electronics Park was constructed by G.E. to meet a need that traces back many years in company history. As we observed earlier in the experiments of well-known G.E. researchers, the science of electronics has played an important part in the development of the company. Electronics manufacture, on the other hand, was relegated to a rather minor role among a great array of G.E. products. This situation came about as a result of the agreement with G.E.'s protégé R.C.A. in 1932, under terms of which G.E. liquidated most of its holdings in the radio-electronics field. G.E. patents and trained personnel, as well as G.E. plants and machinery, were assigned to R.C.A. at the time of the consent decree, which was brought about by government pressure. For a 3-year period, G.E. remained out of the radio-receiver field entirely.

Finally, in 1935, G.E. started on the comeback trail in electronics. Ralph J. Cordiner, now president of the company, was named manager of a G.E. radio division. Radio-receiver production was resumed at the Bridgeport Works in 1937, although it was regarded in some quarters as an intruder that had forced its way into the household-appliance section of the plant. In 1938, Dr. Baker succeeded Mr. Cordiner when the latter succeeded Charles Wilson in the appliance and merchandise department. World War II accelerated G.E.'s reentry into electronics. At the war's end, G.E. was carrying on electronics manufacture in parts of 22 widely-scattered plants. The lack of a headquarters plant to provide leadership by example for units in the electronics department was regarded as a critical deficiency by G.E. management. Company experience with Nela Park near Cleveland, as headquarters for the lamp department, both pointed up the deficiency and set the pattern for electronics-department development. As early as 1942, G.E. planners decided to build a new postwar Electronics Park plant along "campus" lines to serve as engineering, manufacturing, and marketing headquarters for satellite plants of the electronics department, as well as to become a large producer in its own right.

The rapidly-growing electronics business could not be accommodated at G.E.'s Schenectady headquarters. Schenectady was already overcrowded with established activities, expanded to the saturation point under G.E.'s wartime manufacturing program. A new location, somewhat removed from the Schenectady area, was requisite. The location chosen would have to satisfy four major considerations set up by G.E. management, namely:

1. Availability of labor to support contemplated production,
2. Availability of air, rail, and highway transportation, hotels, and other community facilities,
3. Reasonably central location with respect to sources of raw materials and markets for finished goods,

[1] Basic facts presented in this section are drawn from an article entitled "The Editors Report on Electronics Park" published in October 1948, by *Electronics Magazine.*

4. Sufficient nearness to the research centers of G.E. to permit frequent contacts.[2]

Over 100 communities were investigated by the site-selection committee. A number of them met all four requirements reasonably well. Syracuse won the competition, however, because it had two important "plus" values, in addition to the four major considerations listed above. The first "plus" item was the fact that Syracuse already contained a large group of G.E. employees that had operated G.E. war plants at Wolf Street and Thompson Road. The second "plus" item was the existence of Syracuse University, which offered within the community a convenient avenue for evening graduate study by G.E. engineers and other employees.

With regard to the four basic considerations, Syracuse shaped up as follows:

1. *Labor.* population of over 200,000, favorable union-relations record, diversified industry already in community had developed needed skills, available workers included trained, G.E.-employee groups.

2. *Transportation, hotels, and facilities:* city is located in the geographical heart of Upstate New York, has large, wartime air base, plus municipal airport, is on main line of New York Central Railroad and is served by the Delaware, Lackawanna, and Western Railroad as well, is at crossroads of projected New York State Thruway and of projected Washington-to-Ottawa express highway; is a convention center with sizeable hotel facilities, is the site of the New York State Fair; is the site of Syracuse University.

3. *Central location for materials and market.* city is centrally located with respect to New England, Middle Atlantic, and Central states, is near home plants of major electronics raw materials and parts suppliers, which are concentrated in the East; is centrally located with respect to mass electronics market; has excellent transportation facilities, which serve to minimize marketing time and freight costs.

4. *Nearness to G.E. research centers:* Syracuse is within 150 miles of Schenectady and within 300 miles of New York City.

Several sites were available to G.E. within the Syracuse region. The actual land selected consisted of 155 acres of rolling farmland five miles from the center of town. The property is adjacent to the Thruway and is served by good roads in all directions. The site is within the freight-yard limits of Syracuse. It is within a few minutes' drive of Hancock Field, the new Syracuse airport.

The architects' planning for a modern G.E. plant, designed specifically for electronics manufacturing and research, was largely carried out during 1943 and 1944. Half a million blueprints were required to guide the construction of the new plant Over 100 engineers devoted a full year to the task of designing layouts.

Grading for the new project was started just before snowfall in 1944. It was resumed and completed during the spring of 1945. Ground-breaking ceremonies were held in September 1945. The first steel was erected in April 1946. Over 7,000 tons of steel and over 70,000 cubic yards of concrete were used in the project Although the immediate postwar period was a time of great shortages in material and labor, the contractor surmounted these obstacles sufficiently to complete the transmitter building (later renamed commercial equipment building) in a year's time. Illustrative of the magnitude of these difficulties is the fact that 1,800,000 bricks were required to erect the nine major buildings of the plant. By ordinary construction standards, these needs were enormous. The buildings contained fully 1,386,000 square feet of manufacturing, office, and service spaces. They covered 30 acres of the 155-acre tract. Local bricklayers could not have coped with this mammoth project, even in normal times. It was necessary during the 1946 47 building boom to import bricklayers from other communities throughout the region in order to handle the job within the scheduled construction period.

Actual movement of G.E. radio trans-

[2] "The Editors Report on Electronics Park," *Electronics Magazine*, October 1948, reprint page 2

mitter assembly lines from the company's Thompson Road plant 7 miles away started in mid-April of 1947 and continued nightly for 6 weeks.[1] Aided by this transfer of existing equipment from one G.E. plant to another, full production of radio transmitters in the new plant was attained by June of 1947, less than two years after ground was broken. All nine of the main buildings comprising Electronics Park were completed by early 1948.

THE BUILDINGS AND THEIR "INHABITANTS"

The nine major buildings in Electronics Park consist of three large manufacturing units, which house operating divisions of the electronics department, and six smaller staff and service units, which house functions common to all of the line activities. The three large buildings are the receiver, the commercial equipment, and the tube buildings. The six smaller ones are the administration, reception, and service buildings, and the electronics laboratory, the restaurant, and the boiler house. A number of radio and radar test structures, fuel oil storage tanks, guard houses, an electrical substation, and a bus station complete the construction.

In keeping with their modern, tan-brick exteriors, the interiors of Electronics Park buildings conform with the last word in deluxe factory and office design. They are thoroughly air-conditioned, have large windows, and are equipped with fluorescent lighting. There are 57,000 square feet of windows in Electronics Park. Moreover, 28,000 fluorescent lighting fixtures located both in the ceilings and directly over assembly lines and laboratory benches provide 50 foot-candles of controlled lighting at the working level under all conditions. A system of 6-inch floor ducts under the concrete-base tile flooring in offices and laboratories permits installation of a new power or telephone outlet within a few inches of any desired spot. Room partitions also take into account the inevitability of shifts in office and laboratory requirements. They are made of special prefabricated metal sections, which can be installed or removed overnight.

Interbuilding communications have been well planned at the Park. A 1½ mile-long tunnel interconnects all buildings and carries water, steam, condensate return, and telephone lines. Copper grounding wires also run through the tunnel system for the protection of this electronics capital and its inhabitants. Three and a half miles of railroad track with interconnecting switches permit a 50-ton diesel-electric locomotive to spot freight cars at receiving docks or at outgoing platforms in any given building. Five and a half miles of paved roads, plus a mile of concrete walks, facilitate motor and foot traffic within the Park.

The boiler house provides heating and process steam through operation of three, 60,000-pound per hour, oil-fired boilers. Several 400,000-gallon fuel oil tanks store necessary fuel reserves. A 1,200,000-gallon water reservoir provides protection against possible breaks in a 16-inch water line from Syracuse, should an emergency confront Electronics Park. The Park, of course, maintains on-the-spot fire apparatus and a force of watchmen and guards.

The administration building houses Vice-President Baker's electronics department staff, as well as management members whose responsibility focuses more specifically upon Electronics Park. The second floor of the reception building also contains office space. Electronics department staff divisions accommodated in these two buildings include general manufacturing, purchasing, marketing, community relations, accounting, and law. The electronics laboratory division is, of course, located in the nearby electronics laboratory building. In contrast to these advisory-staff divisions, the operating divisions reporting to Dr. Baker conduct manufacturing activities in their

[1] *New York Times*, April 12, 1947, 20:5.

own buildings at Electronics Park. These divisions include receiver, commercial equipment, tube, and government. Each of the first three has its own manufacturing, engineering, and sales personnel and functions as a highly-independent unit under a division manager. The government division is essentially a sales organization. It draws upon other divisions for its manufacturing needs and for some engineering aid, too. Each division works from an annual budget and returns it to the electronics department with a profit at the year's end.

The largest of the operating divisions is the receiver division. Its massive building contains more than 400,000 square feet of floor space. More manufacturing employees work for this division than for the other operating divisions combined. About half of the receiver-division employees work in the receiver building. The remainder are located in satellite plants scattered throughout the East. This division makes radio and TV receivers for a highly-competitive, mass market. It also supplies component parts to other manufacturers licensed by G.E. The following description illustrates the type of manufacturing activity carried on by the receiver division.

After a receiver model has won the approval of division marketing men (see description of new line planning, Chapter 6), the planning section writes up a detailed schedule of operations based upon standard times furnished by the wage-rate group. At the same time, the production-planning section schedules deliveries of raw materials and parts from vendors who have been lined up by the purchasing group. It expedites deliveries as needed to meet production-line schedules. During this period, preproduction samples of the new receiver model are built in accordance with the schedule of operations set forth by planning. They are delivered to engineering for further checking. As the model progresses, the test and inspection group develops necessary test and inspection facilities to ensure uniformly high-quality production. A pilot run of 50 receivers is then manufactured on the production line, which is being set up. This trial run permits management to check the equipment thoroughly, to train working leaders, and to train test and inspection personnel. The manufacturing line itself is then manned with operators. The manufacturing group sets up the new line in accordance with an organization chart which time studies have indicated will result in balanced production. A line-buildup schedule is also provided to indicate a target number of sets to be produced each hour during the training period, when the new line is building up toward full production. Primary training is carried on by working leaders, each of whom has a group of 10 to 15 girls under her charge. Inspection of receivers, both in and after the line, is carried out by check and repair personnel and by final inspectors. The raw materials and parts that enter one end of the vast receiver building shortly pass out the other end in sealed cartons as completed receivers ready for the market. That a great deal hinges upon the good judgment of all groups participating in the development of

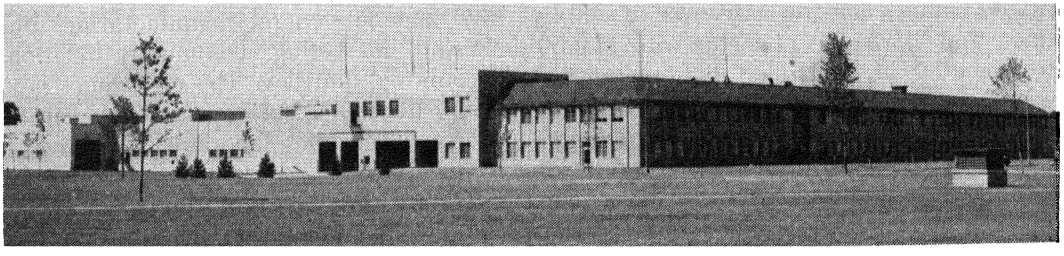


Figure 7–2: The Receiver Building at Electronics Park. (*General Electric Company*)

a new model may be seen by noting that it requires over 10,000 receivers of each model merely to provide samples for the receiver division's dealers. A poorly-designed, poorly-styled, improperly-priced, or "overly-produced" model might result in losses of considerable magnitude.

The second largest manufacturing building in Electronics Park is the commercial-equipment building. In its two stories, the building contains over 372,000 square feet of manufacturing, laboratory, and office space. The commercial-equipment and the government divisions share its facilities. In contrast to the mass-production receiver division, the commercial-equipment division typically works upon a "build-one-at-a-time" type of product. AM—and FM—radio transmitters, TV transmitters, radar, and emergency-communication equipment are turned out by this division in job lots of 1 to 100. In some instances, single units sell to the customer at well over $500,000. They frequently take as long as six months to build and are constructed "much in the way a tailor fashions a suit from a piece of cloth." [4] Electronics equipment used by the armed forces, such as radar, navigation equipment, fire-control units, and communication sets, are the product of the government division. Until the outbreak of the Korean War in 1950, this division usually dealt with small pilot orders for new types of electronic devices built to government specifications. There was little repeat business, because something new was learned by the engineers and by the armed forces upon the delivery of each item. Changed requirements and improvements in design were expected in the many difficult engineering assignments that G.E. undertook for government agencies. The rearmament program, which was launched in the middle of 1950, enabled earlier vigilance to pay off through rapid expansion of quantities of electronics devices delivered to our fighting forces. Nevertheless, in contrast to the receiver division at least, the work of the two divisions located in the commercial-equipment building is conducted on a small, lot-size basis. The following description illustrates the type of manufacturing activity carried on by the commercial-equipment division.

When an order is accepted in the commercial-equipment division, the engineering section furnishes a list of required materials to the production-planning section. Most of the component items in the product in question are specially designed and must be made or purchased in small quantities. Production planning assumes responsibility for scheduling deliveries of raw materials and parts from vendors which the purchasing group designates. If an item is to be manufactured in the shop, the planning section draws up a sequence of operations for production of the item. As G.E. strives to use incentive pay whenever such a system is at all feasible, the planning section sets a price for producing each new item. The price to be allowed each employee per piece for each sequence of operations is also set, and vouchers are drawn up for pay purposes. While these steps are being taken, raw materials and component parts are accumulated in the stock room after passing a rigid incoming inspection. At the scheduled time, the assembly foreman starts one or a few available workers on the smallest subassembly to be undertaken. He gradually builds up the group to the size required by the order in question. Each subassembly must pass detailed inspection and testing. When the complete unit is assembled, it, too, is operated, adjusted, and tested by the test section in accordance with instructions issued by the engineering section. Quality of work is, of course, an objective in both the receiver and the commercial-equipment buildings. In the former, however, a high quality level is the dominant concept and speed is held down until that quality level

[4] Pamphlet, *Souvenir Program, G.E. Open House,* May 20. 1950.

is realized. In the commercial-equipment building, the concept of quality is much more nearly *absolute*. This difference in atmosphere is a natural consequence of the difference in nature of the two distinct markets being served.

The third major manufacturing building in Electronics Park is the tube building (formerly the specialty building). It houses the highly-mechanized operations of the tube division and, in sharp contrast, it houses the general-purpose equipment of the specialty shop as well. The tube divisions of the electronics department were scheduled to move to the Park upon its completion at the time that original plans were laid in the middle 1940's. The lack of labor available in Syracuse for this type of electronics manufacturing and the heavy cost of the move soon caused a shift in plans. The close relationship that existed between industrial cathode-ray tube work and TV cathode-ray tube work was another factor that caused tube manufacture to remain in Schenectady and at other existing plants for the balance of the 1940's. At the close of the decade, however, units of this costly, picture-tube manufacturing equipment were installed at Electronics Park.

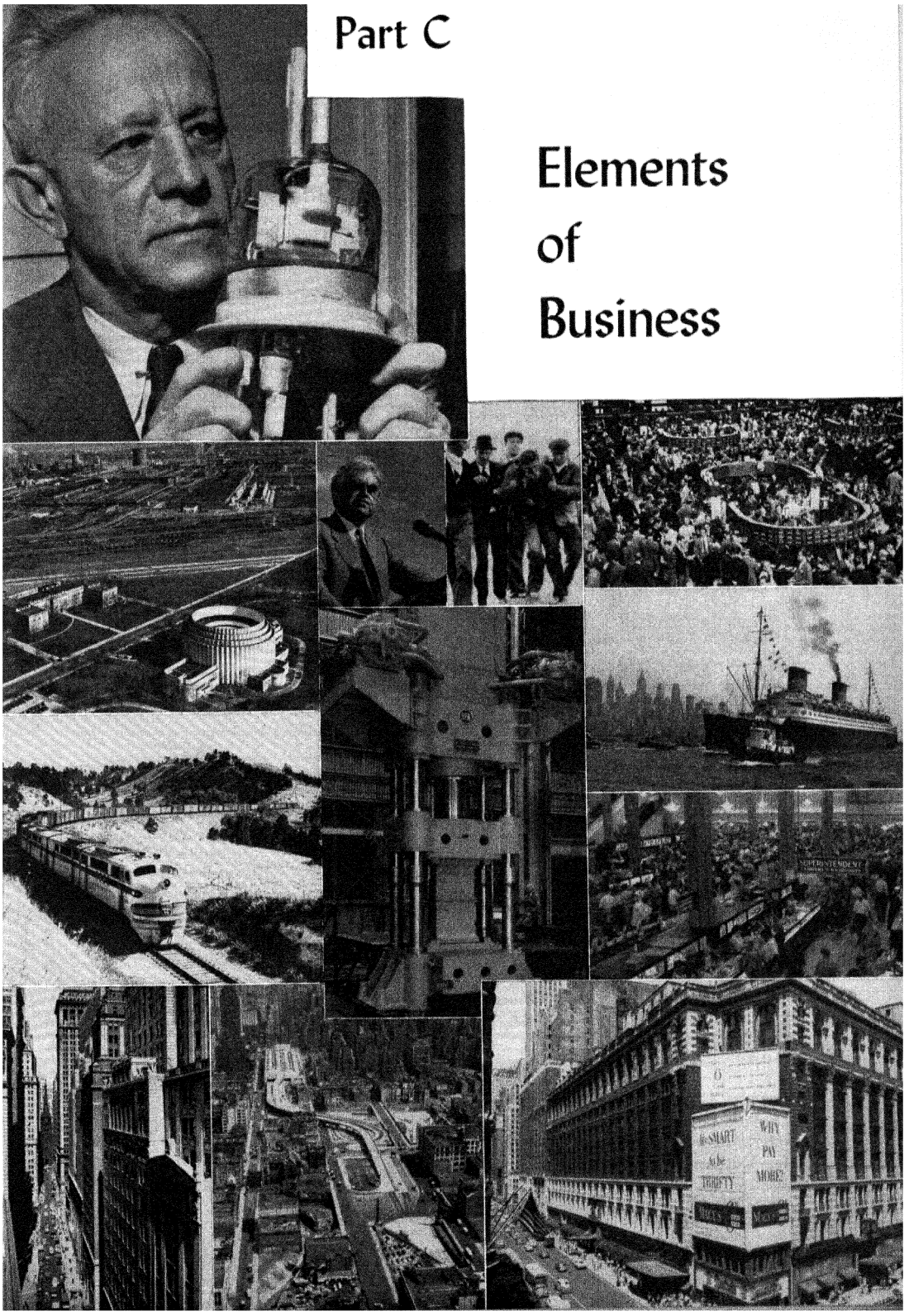
The specialty shop is essentially a big job shop operating along lines laid down in the description of Sam Reddick's job. The shop uses general-purpose equipment throughout. It has been known to change the setup of a drill press or a milling machine as often as 20 times a day. Just as soon as a product develops enough sales volume to warrant high-volume production, the specialty shop loses it to an operating division.

The goal in the specialty shop, besides good workmanship, is to cut the time cycle required for a particular operation down to a minimum. The atmosphere is most informal. For instance, the men usually work from samples rather than from detailed blueprints. They plan in their heads whenever possible, so as to eliminate paperwork. An operation cycle in the specialty shop may vary in duration from a few minutes to an entire week. In contrast, the average cycle in the receiver division is less than a minute for highly repetitive work. The assignment of workers to particular orders is highly flexible in the specialty shop. If necessary, an emergency job can be given an "all hands" priority, and be rushed through overnight.

With production ranging 1) from large-volume specialized machining and assembly work to low-volume general-purpose machining and assembly work in one direction, 2) from household-size receiver sets to mammoth commercial-equipment units in another direction, and 3) from the receiver division's labor-dominated assembly operations to the tube division's machinery-dominated manufacturing operations in still another direction, it may readily be seen that the Electronics Park plant can afford a challenging study in production contrasts. With each passing year the Park is helping to add new luster to G.E.'s historical position as a leader in all things electronic.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	116–121	As our standard of living continues to rise and as the wants of consumers become increasingly diversified, do you believe that general purpose "craft" shops will gain in relative importance as compared with special purpose mass-production plants?
2	116–121	How is it possible for an apprentice helper to learn more readily to turn out quality work on a complex special-purpose turret lathe than on a simple general-purpose engine lathe?
3	116–121	Compute labor costs per piece for guide collars on 1) the turret lathe and 2) the engine lathe in lots of a) 5, b) 50, c) 500, and d) 5,000. Pertinent time and rate data are as follows: Turret Lathe: Setup labor rate, $3 per hour Machining labor rate, $1.50 per hour Setup time, 35 minutes Machining time, ½ minute Engine Lathe: Labor rate, $2 per hour Setup and tool-change time, 20 minutes Loading and machining time, 4 minutes
4	116–121	a. Would you advocate spending $12,000, net, to replace existing general purpose machinery used in stamping holes for a TV subsembly part by highly-specialized equipment with low-resale value? Use of this new equipment would result in savings of one cent per part in direct labor cost. One such part is used for every TV-receiver model currently manufactured by G.E. Assume a sales estimate for G.E. receivers during the next five years of 3 million units. b. Repeat this analysis with assumed savings of 1) one-half cent per part and of 2) two cents per part.
5	116–121	In what ways may plant and equipment be said to "depreciate"? Would general-purpose equipment stored under ideal "mothball" conditions continue to "depreciate"?
6	116–121	Why do some firms adopt the practice of "imputing" interest on capital equipment and funds owned by the company even though no interest money is actually paid for the use of such capital?
7	116–121	In bidding for a large contract during times of depression why might a firm reasonably drop its asking price to a figure but slightly above its direct, out-of-pocket costs even though a sizeable "loss" is thereby to be recorded in company books?
8	121–126	If Electronics Park had been built to handle secret government contract work exclusively and were never open for public inspection, do you believe that G.E. would have built the plant along "campus" lines with deluxe factory and office features?
9	121–126	Would not several four-story factory buildings on a 50-acre plot in the heart of Syracuse's existing heavy industrial area have served G.E.'s needs more economically than 9 sprawling two-story buildings on the 155-acre Electronics Park plot?
10	121–126	Should not the electronics department staff divisions, such as general manufacturing, purchasing, and marketing, and the staff divisions of apparatus, appliance, lamp, and other G.E. departments all be located in G.E.'s New York City office building rather than in "headquarters" plants scattered throughout the East?


Part C
Elements
of
Business
WHY
PAY
MORE?

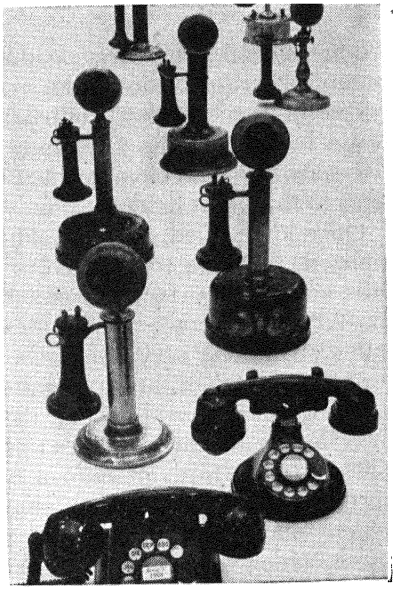
Part C. Elements of Business

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The eleven chapters comprising this section form the "core" or "heart" of business administration.

Description of Montage Photographs	*Courtesy*
Dr. Dayton Ulrey of RCA examines five-kw power tube for TV transmission	*Radio Corporation of America*
River Rouge plant and Ford Rotunda	*Ford Motor Company*
John L. Lewis addressing United Mine Workers	*Roy Ackerman Photos, Tamaqua, Penna.*
Victim of tear gas barrage during industrial conflict, 1919	*Brown Brothers*
Trading floor of the New York Stock Exchange	*New York Stock Exchange*
Diesel engine pulling mile-long freight around horseshoe curve	*Chicago, Burlington & Quincy Railroad*
A massive press, emphasizing machine power under control of workmen	*Hydraulic Press Manufacturing Company*
French liner "Liberte" moving up Hudson River past New York skyline	*The Port of New York Authority*
Main floor, Macy's department store	*Macy's*
Wall Street financial district	*New York Stock Exchange and Ewing Galloway, N. Y.*
N.Y. Port Authority bus terminal	*The Port of New York Authority*
Macy's department store, N.Y.C.	*Macy's*

8
Commercializing Inventions and Ideas Through Business Organization



The evolution of the telephone illustrates change and progress in product design and in business generally from period to period. (*Taken for LIFE by Photographer Eric Schaal (c) TIME, Inc.*)

THE NEVER-CEASING FLOW OF ideas and inventions from the fertile minds of thinking men is a cornerstone on which the characteristic structure of modern society is, in good part, based. Countless men, from all lands and from all walks of life, contribute their bit to the swelling fund of human knowledge in whatever fields their interests happen to fall. Our method of thinking, our method of living itself, devolves into a process of climbing upon the shoulders of generations which have gone before. Were it not for our schooling under the tutelage of others, we should appear to be speechless idiots, if indeed we survived long enough to have contact with our fellow men.

We have already observed in chapter 4 how, in the fields of radio and TV, the reworked ideas of many men combined over a span of more than a full century to yield workable systems of speaking and viewing via radio waves sent through space. In the early experimental period, which preceded the commercialization of the wave lengths, men of science, both amateur and professional, pre-empted the field. The names of such men as Franklin, Volta, Bell, Edison, Hertz, Marconi, and Alexanderson are well known as "mileposts" along the path leading from electricity to commercial radio.

Once the fields in which these scientists worked were commercialized, many of these men put on a second hat and became known as business enterprisers. Bell, Edison, and Marconi come particularly to mind as men of commerce, as well as men of science. In broader perspective, however, men of science operating in a commercialized field tend to enter into working arrangements with men of commerce who do not also possess their highly-developed, scientific talents. This type of development is an offshoot of the process of specialization under which men of scientific bent seek to free themselves from the administrative worries associated with business. Moreover, top men of science are not necessarily doubly endowed with top administrative talents as well.

New names and new organizations tend to come into positions of prominence, once a field is ripe for commercial exploitation. Lawyer Owen D. Young of G.E. and R.C.A. and Generals John Harbord and David Sarnoff of R.C.A., for instance, were men of brilliance but not men trained in science. The impetus which they gave to radio and

TV in their capacities as leaders of large organizations of businessmen and scientists certainly exceeds that contributed by all but a handful of the thousands of productive scientists who have devoted their entire lives to this great field.

Once an applied science field is commercialized, the area for service to the public fans out rapidly. In commercial radio and TV, not only scientists and manufacturers but distributors, servicemen, broadcasters, suppliers of talent, and promoters of ideas and organizations all along the line add their bit to the advancement of the field. This bursting forth of human energy was particularly evident during the radio boom, which followed World War I, and the TV boom, which followed World War II.

LAUNCHING AN ENTERPRISE

Although everyone will agree that a business organization is not necessarily a profit-*making* enterprise, it may surprise some to find that certain enterprises organized to accomplish business tasks are not even profit-*seeking* enterprises. Government agencies, such as the Tennessee Valley Authority, the Atomic Energy Commission, and the Post Office, fall into this category. Many private nonprofit organizations, likewise, face problems involving the selection of alternative forms of organization. In this discussion, however, we shall concentrate upon profit-seeking business organizations in the orthodox sense.

Before considering some simplified cases in which new business enterprises were launched, let us pause to formulate some general considerations underlying the selection of a specific legal form of business organization. In some instances, no real choice is available to the founders of an organization. Such would be the case if the organization being considered were to be a national bank, which must, by law, be a corporation. In other instances, the organization being considered may be so mammoth in scale and involve so many people that a corporation would be the only feasible form of organization. The formation of R.C.A. in 1919 by G.E. and other existing corporations would be a case in point. In the great majority of instances, however, business enterprisers have a genuine problem to solve in selecting a suitable form of legal organization for their particular purposes.

If this problem is to be resolved through logical reasoning, a number of major factors must be studied and assigned weights pro and con in each instance. These factors may be grouped broadly under the following main headings:

1. Legal requirements for organizing and extent of government control.
2. Ownership prerogatives and responsibilities.
3. Decision-making opportunities and requirements.
4. Capital requirements and other financial needs.
5. Life-span considerations.

Let us outline the nature of each of these topics in turn, and the apply them in practice to selected case illustrations.

1. Legal requirements for organizing and extent of government control. The individual business proprietor typically has only to hang up his sign, and he is launched in a business enterprise of his own choosing. His rights and obligations are no different from those of the ordinary citizen. The government regulates his activities under law only to a minimal extent, unless he happens to select some special field in which police regulations are of unusual importance.

A business partnership, defined as "an association of two or more persons to carry on as co-owners a business for profit," [1] may actually exist in cases in which no written agreement or contract has been drawn up. Nevertheless, the basic facts of division of

[1] See Homer V. Cherrington, *Business Organization and Finance,* page 16. New York: The Ronald Press Co., 1948.

ownership and sharing of control subject the typical partnership to more legal complications than are faced by the typical individual proprietor.

A corporation, defined by John Marshall as "an artificial being, invisible, intangible, and existing only in contemplation of law," [2] must obtain a certificate of incorporation from the state before it can even begin to function. The rights and obligations of persons participating in the corporate activity are also defined by law. They are set forth in writing in the articles of incorporation and in the by-laws of the firm. Directors and officers of the corporation must comply with certain legal requirements before they can act in a corporate, rather than in an individual, capacity. The government that creates a corporation reserves the right to regulate its actions more closely than those of noncorporate activities. It also charges for the corporate privilege by levying special fees and taxes.

2. Ownership prerogatives and responsibilities. The average citizen in our form of society takes considerable pride in the fact of his ownership and possession of various forms of property. The intensity of this pride and the specific outlet it seeks differ markedly among individuals. If a businessman takes pride in ownership and, in addition, has a strong desire to control the activities of that which he owns, he might be well advised to set up an individual proprietorship. If ownership alone would suffice, an individual might invest his funds in corporation securities, while retaining his former job, and have equal assurance of income without assuming responsibility for independent management.

If an individual who wished to own and control property found a second person in whom he had complete confidence, he might enter into a business partnership, instead of retaining an individual proprietorship. Both ownership and control would be shared, instead of possessed completely, under such an arrangement. On the other hand, liability for debts incurred by either partner is unlimited. Either partner could be stripped of all of his personal wealth, if necessary, in the event that the enterprise failed to meet its obligations.

If an individual desired neither to shoulder full responsibility for an enterprise himself nor to share unlimited liability with selected partners, he might find it advisable to take advantage of the corporate form of business enterprise. Each individual sharing the ownership of the corporation would have such responsibilities as he himself decided to accept. His liability for losses incurred by the corporation is normally limited to the sum he has invested in its securities.

3. Decision-making opportunities and requirements. The wishes of an individual with respect to ownership prerogatives and responsibilities will often run parallel to his wishes regarding decision-making. If he places great value upon his right of personal leadership, he should, perhaps, operate an individual proprietorship or, at worst, retain majority control of a corporation's stock. If, on the other hand, a very high level of leadership which the individual himself does not happen to possess is required, he may be compelled to set up a corporation in order to attract able leadership to assume responsibility for the operation of the enterprise. In an enterprise of any considerable size, a full slate of directors and of company officers might be needed to handle competently the weighty decisions confronting the organization.

4. Capital requirements and other financial needs. If the amount of capital required by an enterprise is relatively small and if other factors permit, an individual proprietorship form of organization may serve the purpose effectively. The proprietor would typically supply his own capital needs. This same

[2] Chief Justice John Marshall in "Trustees of Dartmouth College v. Woodward," 4 *Wheaton* 518, 639 (1819).

* *

analysis might hold for a partnership. Bank loans could be utilized from time to time, but the major stake in the business would characteristically be that of the business managers themselves.

If the amount of capital required were large, the corporate form might be better in order to attract the necessary capital. Persons wishing to invest in the firm might well be reluctant to participate unless a) they themselves are assured of limited liability and b) the firm is more permanent in duration than the life expectancy of one key individual. The corporation is able to tap a broad group of suppliers of venture capital that the individual proprietorship and the partnership, by their natures, cannot reach. The fact that securities are easy to sell, because of the existence of an organized market, yields a competitive advantage to the corporation over the other two forms in this important respect.

5. Life-span considerations. As mentioned above in the discussion of finances, the probable duration of a business enterprise is oftentimes a consideration of real significance in planning for a new firm. Some enterprises are intended to be brief in duration. A great many more are fondly expected to last indefinitely. The number of business organizations terminated each year amounted to more than three-fourths of the number created during the "normal" years of the late '30's, prior to World War II. More than half of the new firms established were merely taking over the assets of firms that were discontinued during these years.

The costs of this turnover were high for society in general. They were frequently crippling to the individuals who had ventured capital and lost. Surveys indicate that the mortality *rate* is highest among the 70 per cent of our business enterprises that are individual proprietorships. The rate is second highest among the 10 per cent that are partnerships. The 20 per cent of our enterprises that are corporations have the lowest mortality rate and, thus, the longest duration.[3] Within each group there are, of course, rock-ribbed centenarians, as well as feeble infants. The difference in turnover is regarded by many investors and creditors as being significant, however, and this factor normally works to the advantage of the corporate form of business organization.

The various headings listed above are frequently interrelated in their effects in a given case. For instance, a creditor will typically relate capital requirements and length of life. He will insist upon a shorter loan period for an individual proprietorship than for a corporation. He will also pay heed to a) the legal limitations placed upon the organization by the state, b) the situation of the owners, and c) the competence of the management, when considering its application for a loan. The ability of a business organization to survive a crisis situation may well depend upon foresight exercised at the outset by the promoter of the enterprise as he selected what he considered to be a suitable form of legal organization.

CASE A. INDIVIDUAL PROPRIETORSHIP

Raymond A. Diola, Proprietor, Diola Radio Shop

Raymond A. Diola of Midvale had followed the development of wireless telegraphy ever since that thrilling day in December 1901 when his father had proudly announced to the household that his fellow countryman, Marconi, had flashed a wireless signal across the Atlantic from England to Newfoundland. Young Ray had pored over the press reports of this daring feat. He even saved the clippings after his father finished with them a month later. In his boyish mind, there was planted the ambition to find his own life's work in this great new field.

[3] Albert Ralph Koch, *Financing of Large Corporations*, page 9. New York: National Bureau of Economic Research, 1943.

Raymond studied wireless theory as part of a special physics course in Midvale High School a decade later. From time to time, he contemplated leaving Midvale to seek a position in some seacoast town with a wireless company. After considerable family discussion, however, Ray acceded to his family's wishes to the extent of remaining in Midvale to become a Western Union telegraph operator.

World War I gave Ray his first chance to break into the wireless field. Upon enlisting in the Navy in 1917, he was assigned to duty as a ship's wireless operator for the duration of the conflict. After being mustered out in 1919, he returned to his old post in Midvale, although he kept his personal wireless interest alive by building his own amateur wireless sending station late in 1920. Thus Ray was among that select group of wireless amateurs who had the opportunity to tune in Dr. Frank Conrad of Pittsburgh and his sons on Wednesday and Saturday evenings as they played phonograph records for the entertainment of fellow "hams."

Ray charted the spread of the radio boom during the winter of 1921–22, following the establishment of KDKA and other permanent stations, with meticulous care. He sensed a developing opportunity to break away from his wire job at the telegraph company and to strike out for himself in the romantic field of wireless telegraphy, which was now being referred to popularly as "radio." In preparation for this carefully-nurtured venture of his own, Ray signed up during the spring for two evening school courses in the adult division of Midvale High School. One course was, naturally, the "Theory and Practice of Radio." The second course, which surprised many of his close associates, was an elementary course in business entitled "Distribution I."

By the fall of 1922, Ray was in a position to bring his plan to fruition. He consulted Archibald Pate, the local banker, about procedures he should follow in setting up a retail radio merchandising store. He had carefully worked up a plan of action, which he submitted for inspection by the banker. It included the following, rather formal, analysis of advantages and disadvantages of what Ray considered to be the three alternative forms of legal organization his business could adopt.

Proposals for Organizing Legally the Diola Radio Shop

Problem: What legal form of business organization should this enterprise adopt?

Question 1. Might this retail radio merchandising shop be organized as an individual proprietorship?

For

1. The legal requirements for organizing my store would be minimized. I need only to rent a suitable store location and hang up my sign.
2. The fees I would have to pay to establish other forms are not necessary here. Both state fees and attorney fees could be saved.
3. I may own *and* control my own business under this plan. It would be the Diola shop, and I can build it into a business that will be a credit to our family name.
4. I may put into practice the ideas I have gained about radio and distribution without interference from anyone. I have the experience needed to do well in this new type of business.

Against

1. I shall not have the benefit of counsel of other persons having a major ownership interest in the business, assuming that such persons were available in Midvale.
2. I, alone, shall be responsible for paying the obligations incurred for this enterprise, and I might lose everything.
3. If I am extremely successful in a very short while, I may not be able to raise enough capital for other stores or other services from my profits or from my friends.
4. The business would have to be reorganized upon my eventual retirement.

For

5. My life savings will be sufficient to cover my initial inventory needs if I purchase wisely, and leave a reserve for other expenses as well.
6. I may very simply add to or subtract from the business activities I conduct without consulting anyone.

Against

Conclusion 1. An individual proprietorship appears to be feasible in this case and should be adopted, unless other alternatives appear to be even more feasible at this time.

Question 2. Might this retail radio merchandising shop be organized as a partnership?

For

1. The aid of an experienced businessman, particularly a retailer, would be most valuable, as I have not had prior business experience other than academic work.
2. Some extra capital would enable the radio shop to purchase a fuller inventory and give a broader margin of safety for contingencies.
3. An experienced installation and repair man would also make a desirable partner by adding to the service the radio shop could perform in the community.

Against

1. No suitable partner is known to me in Midvale.
2. The Byrnes Electrical Appliance Store, which is already established and has recently added an elaborate stock of radios and parts, does not wish to join forces with anyone outside the Byrnes family.
3. The income from the business might not support more than one person at the outset.

Conclusion 2. Although a partnership would be feasible under favorable conditions, no suitable partner is at present on the scene.

Question 3. Might this retail radio-merchandising shop be organized as a corporation?

For

1. The aid of experienced businessmen serving as a board of directors and the aid of experienced business officers would be valuable if I were able to expand my organization to include establishment of similar stores in nearby towns.
2. The extra capital I might get from sale of stock would enable me to expand rapidly if my business becomes successful at the outset.
3. My business might be expanded in concept to include the assembly and the repair of radio sets, as well as just the sale of sets and parts.

Against

1. No experienced men are now in this community.
2. If I should acquire extra capital, I might have to sacrifice control of my company to outsiders in order to get them to participate in the venture on a sufficiently large scale to make a corporation worth while.
3. The costs of setting up and operating a corporation are relatively high in light of my currently limited objectives.
4. The income from my business might not support an expanded staff at the outset.

Conclusion 3. Although a corporation might be feasible at some future date as my objectives broaden and as suitable participants become interested in this venture, at the present time I would not be able to realize the normal advantages of corporate organization.

Final conclusion. The Diola Radio Shop should adopt the individual proprietorship form of business organization at this time, although eventual progression to the partnership and/or corporate forms is not out of the question.

Banker Pate encouraged Raymond to go ahead with his business venture as an individual proprietorship. He offered to advise the young man from time to time as new problems cropped up. Pate himself was interested in the possibilities presented by the radio boom. He discussed developments at considerable length with Raymond: in effect, trading his knowledge of business in general for Raymond's technical knowledge of the new radio field.

Acting upon Pate's advice, Ray organized an amateur radio club in Midvale that very same week. The club was very much a going concern by the time Ray's radio inventory arrived from various factories. The opening of the Diola Radio Shop was made the occasion for the club's first important banquet, which included a well-known guest speaker. Ray gave full rein to his natural interest in amateur radio. He knew the radio "ham's" problems, his peculiar vocabulary, and his tremendous enthusiasm for all things radio. When a club member or a member's friend came into the store, Ray acted far more as an adviser than as a sales clerk. His clientele grew by leaps and bounds, right from the start. He soon found himself filling mail orders from amateurs located as far as 150 miles away. He developed the practice of checking upon such customers' needs at night by contacting them on his own amateur radio transmitter.

The competition of the old, established Byrnes Electrical Appliance Store turned out to be far less formidable than Ray had feared it might be. Byrnes had a considerably larger inventory of radio sets and parts than did Ray. Yet Ray knew radio from the inside, while Byrnes was content to regard his radio department as just one of many lines of goods handled by the Byrnes Company. Byrnes knew brand names and prices for his various radio parts, but he did not know how the parts should be used. On numerous occasions when shortages developed, Ray was able to make substitutions for customers who came to him after meeting with disappointment in the Byrnes store. In all cases, these substitutions were such that they could be made without harm to the quality of the customer's set. Although Ray had just half the inventory that Byrnes did, he stocked the right parts for his customers' evolving needs. He thereby avoided the distress sales that more and more frequently characterized his rival's radio-department activities.

By the end of his second year in business, Ray had built for himself one of the most attractive retail businesses in Midvale. At this point, he hired two young radio-club members to serve as countermen in his shop, thus taking the mounting pressure of day-to-day sales off his own shoulders. Although he already had a "good thing," Ray began to plan a new program of expansion within the still-booming radio field.

CASE B. PARTNERSHIP
Diola & Trola, Partners
Midvale Radio Sales & Service Co.

In the fall of 1924, Victor C. Trola moved to Midvale from New York City and set himself up as an independent radio repair and service man. Raymond Diola had at first viewed Victor's activities with some misgivings. He soon found that the presence of the service man was a boon to the Diola radio business, however, as Victor met customer demand for a type of field service that Ray was not in a position to offer. Vic set up a service shop in the basement of his newly-purchased home. He traveled throughout Midvale and the surrounding countryside, analyzing special reception problems, installing improved antennae, and trouble-shooting in cases of receiver breakdown. As Vic did not stock parts in his own repair shop, he soon made arrangements to purchase parts from Ray at a trade discount when making repairs. As time went on, Vic began to refer more and more customers from outlying areas to the Diola Radio Shop for purchase of modern sets and accessories. Ray began the practice of granting Vic a small commission on these new sales when substantial sums were involved.

Vic had studied radio servicing in an R.C.A. training school, while he was residing in New York City. Although he had ended his formal education after eighth grade, he readily grasped the fundamentals of electricity, magnetism, radio, and shop procedure, which the six-months service course took up. He acquired valuable experience in radio but was unable to earn a living wage as a service man in the highly competitive New York City area. He hoped to develop a more satisfactory clientele in Midvale, which was his wife's home town. He and Ray soon became close friends through common membership in the Midvale Radio Club.

After Ray had sized up Vic over a period of a dozen months, he approached the service man with the following proposition:

Ray proposed that Vic join the Diola organization either 1) as a salary-plus-bonus commission service and repair employee or else 2) as an independent department, which might draw upon Diola facilities in accordance with agreed-upon payment terms.

After much deliberation, Vic countered with a proposal that Ray accept him on a full partnership basis, which would merge the two types of business that they were conducting. They then sat down to iron out differences on a rational basis. Ray pointed out the importance of the Diola Radio Shop's "going concern" value and the magnitude of his own financial investment in Diola assets. Vic conceded the weight of Ray's argument and agreed to accept a one-third share in the business with the understanding that he would eventually put up one-third of the firm's capital. They jointly planned a program of expansion that held forth the promise of greatly increased returns for both men over what they were currently realizing in their separate businesses.

At this juncture, Ray and Vic took up the question of legal organization. They decided to form a new company, called the Midvale Radio Sales and Service Company, but were uncertain as to whether it should be a partnership or a corporation. Ray's characteristic approach to the problem was set forth as follows:

Proposals for Organizing Legally the Midvale Radio Sales and Service Company

Problem: What legal form of business organization should this enterprise adopt?

Question 1. Might this company be organized as a partnership?

For

1. A partnership agreement may be drawn up in a few hours' time by a lawyer, and the new firm will be a going concern. The division of rights and responsibilities may be expressed explicitly in legal language.
2. The term "partner" is well regarded in business and professional circles. Our joint business will be regarded as a venture of growing importance by our friends and associates.
3. Each partner has control over the possible entry of third parties into the picture, whereas the sales of securities to new stockholders could not be this closely controlled.
4. Together we can operate in integrated fashion what has heretofore been two separate businesses. We do not need the help of third parties as yet in the active management of the enterprise.
5. The amount of capital required for this

Against

1. We shall each have unlimited liability for losses incurred by the firm. Our personal possessions could be taken from us by creditors if the business should fail.
2. As either principal can commit the firm without the knowledge of his partner, the risk of loss because of actions taken by another exists for each partner.
3. It will be difficult to work out and maintain adequate procedures for sharing decision-making powers.
4. The counsel of other business leaders is not as readily available to a partnership as it would be to a corporation with its own board of directors.
5. The ability of the firm to attract capital for rapid expansion is more limited under the partnership form than it would be under the corporate form.

For	*Against*
new level of operations can be supplied by the two partners without need for outside aid. 6. As the investment required is relatively small, either partner could arrange to buy up the entire business if the need for such action arose.	6. The partnership might have to be dissolved at a most inconvenient time in the event of the death or withdrawal of one of the partners. Transfer of control without break in continuity of legal life could be achieved in a corporation.

Conclusion 1. A partnership is a feasible form of legal organization at this time and should be adopted, unless the advantages to be gained from incorporation are clearly worth the costs and other drawbacks of this procedure.

Question 2. Might this company be organized as a corporation?

For	*Against*
1. Each owner would be liable only to the extent of his existing investment in the corporation, and his personal holdings would not be in jeopardy. 2. The corporate form of organization offers the best opportunity to raise funds that would be needed for large-scale expansion of a successful business. Casual investors of venture capital would not tend to participate in a partnership arrangement. 3. The corporation would enjoy a life span that is not necessarily limited to that of the two founders.	1. The legal procedures involved in setting up a corporation are considerably more complex than those required in a partnership. 2. The state regulates corporate activities in greater detail than it regulates activities carried on by partners. 3. The legal costs of setting up and operating a corporation are greater than those incurred in setting up a partnership.

Conclusion 2. While the corporation form of organization offers important advantages with respect to future growth, it does not appear to be worth the cost and effort involved at this early stage in the company's development.

Final Conclusion. The Midvale Radio Sales and Service Company should be organized as a partnership at this time, although it is possible that a highly successful and greatly expanded company should be reorganized at some future date as a corporation.

Ray and Vic pooled their efforts effectively during the remaining years of the 1920's. Their combined resources and talents enabled them to move the firm to a desirable downtown store location, which featured a large storage and service area in an adjoining building to the rear. The two men were particularly enterprising in building up the service and repair aspect of their business. They were able to complete service jobs profitably at a price level that would have made those jobs decidedly unprofitable for rival radio dealers to handle. Vic's ability to build a volume trade for himself and his crews was of key importance in this respect. His ability to convince customers of the desirability of rebuilding outmoded sets that had fine cabinets resulted in off-peak jobs that gave the company an enviable profit margin on radio parts, as well as on service labor. His practice of leaving an inexpensive model of a modern set in each home requiring a major radio servicing job while repairs were made at the shop frequently resulted in new receiver sales by the firm. At Ray's suggestion, Vic also made arrangements with more than a hundred other radio dealers throughout the Midvale region under which these dealers shipped by truck those sets needing extensive repair jobs. Volume expanded substantially year after year as the Midvale Radio Sales and Service Company performed this vital service function for

outlying dealers, as well as for its own consumer clientele.

CASE C. CORPORATION
Diola, Trola & Associates, Owners, Midvale Midget Radio Corporation

During the winter of 1928 29, Ray took a well-earned vacation trip to California. This trip turned out to be instrumental in changing the entire course of his business life. He had expected to find everything a full size larger in the "Sunshine State." He was more than a little surprised to find one notable exception to this general rule during an inspection trip through a Los Angeles radio manufacturer's plant. The plant itself was suitably overgrown. Yet, its principal product was charmingly undersize. Ray's manufacturer friend proudly unveiled a new line of "midget" radio sets, startlingly different from anything that Ray had experienced before.

The potentialities of this new radio development immediately captured Ray's imagination. He and Vic had been seeking new fields to conquer back in Midvale as their partnership continued to prosper season after season. Ray now visualized a venture into the assembly and distribution of midget table models as the "big idea" around which he and Vic might build their future plans. After contacting his partner by transcontinental telephone, Ray entered into negotiations with Donald Leeds, the manufacturer of these midget radios. Ray emerged from a series of conferences with a license to manufacture and distribute the new small radio line in a sizeable territory radiating approximately 300 miles in all directions from Midvale.

After putting in a full month of intensive study and planning at the Leeds plant, Ray and Vic, who had shortly joined him, returned to Midvale to promote a new radio enterprise along radically different lines. The two men reviewed their existing partnership agreement and found that it needed basic revisions in keeping with the following line of reasoning.

Proposal for Organizing Legally the Midvale Midget Radio Company

Problem: What legal form of business organization should this enterprise adopt?

Question 1. Might this radio manufacturing and distributing firm be organized as a partnership?

For

1. The legal requirements for drawing up a partnership agreement covering an enlarged group of associates and providing for a revised division of profits are relatively simple.
2. Each partner has control over the possible entry of new associates into the picture, whereas the sale of securities to new stockholders could not be this closely controlled.

Against

1. We shall continue to have unlimited liability for losses incurred by this large-scale firm. Our personal assets could be claimed by creditors in event of financial difficulty.
2. The two original partners would have to share control of the firm's activities with additional partners.
3. As any one of a number of partners could commit the firm to a course of action, the risk of loss through errors of judgment by others is considerable.
4. The ability of the firm to attract capital is more limited under the partnership form than it would be under the corporate form.
5. The partnership might have to be dissolved at an inopportune time in the event of death or withdrawal of a partner.

Conclusion 1. A partnership form could be used, but its disadvantages become increasingly significant as the size of the projected firm is increased.

Question 2. Might this company be organized as a corporation?

For

1. Each owner would be liable only to the extent of his stockholdings in the large corporation.
2. The corporate form offers the best opportunity to raise funds for this large-scale business.
3. The services of outside directors and professional managers may usually be obtained more readily when the corporate form of organization is used.
4. The securities of a corporation would have a readier market than would the holdings of a partner.
5. The corporation would enjoy a life expectancy not limited to that of the various founders.

Against

1. The legal procedures and costs involved in corporate activity are more complex than those required in other forms.
2. The state regulates corporate activities to a greater extent than it regulates other forms.
3. Taxes levied upon corporations are higher than those placed upon other firms.
4. It might prove difficult for the two original founders to retain control of the corporation in the long run if great quantities of new venture capital are required.

Conclusion 2. A corporate form of organization would be feasible for this proposed large-scale enterprise.

Final Conclusion: The Midvale Midget Radio Company should be incorporated, and may well be named the Midvale Midget Radio Corporation.

The Midvale Midget Radio Corporation was launched during the summer of 1929 as the successor organization to the Midvale Radio Sales and Service Company. A group of Midvale businessmen joined with Ray and Vic in this venture. Majority control of common stock was left in the hands of the two original promoters. By late fall, the firm was turning out midget radios on an assembly-line basis in a large plant, which had been vacated by a bankrupt piano concern. Sales at once outstripped production capacity for this new item. The 300 existing dealers of the Midvale Radio Sales and Service Company clamored for delivery of midget radios on an allocation basis. The radios retailed for the amazingly low price of $45 initially, at a time when the average price of all radio models was $204. Even within the table-model field, the midgets retailed at just a bit over half of the average table-set price of $80.60, which had been noted in the New York radio distributors show. The midget radios were refreshingly different in other important ways. They required just five tubes at a time when the average radio contained eight. They competed directly with the 16 per cent of all models that were table models and only indirectly with the 84 per cent that were expensive consoles.[4] The midget radio not only made radio available to new income groups, but it also opened up a tremendous field for use of second radios in the homes of existing owners.

Even after the depression deepened in 1930 and 1931, dealers found that midget radios could be sold in volume on a cash basis to moderate-income families. They served as a "come on" for continued sales of regular radio sets. In addition, the great increase in set ownership, which the midgets made possible, helped to maintain a profitable market in the sale of radio tubes and parts. By 1931, Midvale was turning out a much-improved, 4-tube, midget radio, retailing for just $25. Demand continued to push supply in the midst of a severe eco-

[4] Howard W. Dickinson, "Selling the Romance of Radio." *Radio Broadcast,* Vol. XV, No. 3, page 132. July 1929.

nomic depression. Through emphasis upon product development of its own, Midvale improved the circuit design, speaker, tone, and reception of its sets. It continued to purchase tubes and major parts from the West Coast firm. Although Midvale stressed "value, utility, service, and quality," as well as "price," the price of its low-cost model dipped to $6.50 by 1934. Other Midvale models sold for a shade under $10 and $15. The company's advertising program set up the ideal of a set for every room of the home. Family purchases, plus family receipt of gift radios, brought this "ideal" close to reality during the middle '30's in many homes throughout the Midvale sales territory.

ROLE OF THE PROMOTER

Although Ray and Vic would quickly disclaim the title, they served as effective business promoters in 1929 when they brought forth the Midvale Midget Radio Corporation. They discovered a basic idea in California and investigated its potentialities right at the manufacturer's plant. They then developed an operational plan, assembled the component elements, and set up a going concern in Midvale.

Some business promoters during radio's infancy were not as wholesome as these two men who helped to return radio to a "midget" stage of development. During the summer and fall of 1922 in New York City, scores of disreputable promoters and stock manipulators, who knew nothing whatsoever about the scientific basis for radio, invaded the booming field in order to exact tribute from gullible members of the public. This fringe group of unprincipled promoters organized "paper" companies and printed "paper" stock certificates. They sent out high-pressure field men armed with sensational sales literature to prey upon investors who had caught the "radio bug."

The Better Business Bureau of New York City, which was actively backing a "truth-in-advertising" campaign at this time, moved to attack these fake radio companies before they could gain full headway. One of the offending companies, which had a large suite of offices in New York, talked in glowing terms of a busy plant in New Jersey. It confided to investors that the firm had cornered several valuable patents. The firm advertised modestly that its officials were nationally-known figures in radio science and in international finance.

When the Better Business Bureau exposed the fanciful nature of all of these so-called "facts," the promoter of the offending firm brought suit against the managing secretary of the B.B.B. for criminal and civil libel, asking damages of over half a million dollars. The court threw out the case in short order when the B.B.B. proved the accuracy of all of its statements. The B.B.B. based its defense entirely upon testimony by former employees of the offending firm who had quit their jobs rather than be a party to such flagrant dishonesty.

A sales circular claimed that De Forest Company, a large radio manufacturer, and Butler Brothers, a large mail-order house, had placed important orders with this particular firm for radio parts. It also stated that the firm had 50 persons busily engaged in its New Jersey plant. The facts were 1) that no company had placed orders for sets or parts, 2) that fewer than a dozen shop and clerical employees manned the New Jersey plant, and 3) that the firm was making no profit whatsoever.

The financial officer of the company, who had been publicly billed as "former financial adviser to J. P. Morgan & Co.," "internationally known to businessmen," and "the associate of such well-known magnates as J. P. Morgan, Cornelius N. Bliss, Governor Benjamin Strong, Jr., J. D. Rockefeller, Jr., the late Henry P. Davidson, Herbert Hoover, and a score of others," testified that he had never acted in these capacities. Moreover, he claimed that he had resigned his position as soon as he discovered that the promoters were misrepresenting his background in this manner.[5]

[5] H. J. Kenner, "Ride to Riches with Radio." *Radio Broadcast*, Vol. 2, No. 5, pages 398–400. March 1923.

A second radio firm investigated by the B.B.B. was organized by men who knew how to prepare a $5 million stock issue, but who were completely uninformed about the field of radio itself. An eye-catching stock sales circular, sent by this firm through the U.S. mails, featured several full-page photographs of factories located in scattered New Jersey towns. The circulars did not actually state in so many words that these photographs were taken of company-owned plants, but the inference to be drawn was made obvious.

Investigation showed that the company actually possessed no industrial plant or equipment whatever. The pictures turned out to be those of factories owned by firms with which this company had entered into tentative agreements to obtain supplies of radio parts. The company had three times changed its president and twice changed its entire board of directors within the space of three months while this literature was being circulated. The moral power generated by B.B.B. publicity as to company activities led to the early abandonment of this stock-selling scheme.

State "blue sky" laws and Federal security market regulation have since put teeth into enforcement of business standards for which B.B.B.'s throughout the country had been crusading over a period of many decades, against heavy odds. Not all business promoters in the radio field were of the "blue sky" variety, however, even during the wide-open days of the post-World War I period. We need only to refer to the remarkable promotion conducted by Owen D. Young in 1919 21 to clinch this point. (See chapter 4.)

CORPORATE FORM OF ORGANIZATION

In contrast to economic conditions prevailing in the middle of the 19th century, business activity today is dominated by the operation of large-scale organizations under the control of owners and managers of corporations. Before presuming to inquire why such a dramatic shift from individual to corporate enterprise has occurred during the last hundred years, we should clarify our conception of the corporation itself.

We have referred earlier to the corporation as "an artificial being, invisible, intangible, and existing only in contemplation of law." This is a legal view presented in 1819 in the words of a great United States chief justice, John Marshall. There are those who today agree with this "fiction theory" and there are those who oppose it. More specifically, there are some instances in which American courts have upheld the fiction theory, and there are others in which the courts have looked behind the fiction in search of substantive justice.

From the standpoint of the business administrator, information concerning the economic functions of the corporation and conditions under which corporations operate in specific states and in specific situations are more significant than is the tracing of legal theory on the subject. From an economic point of view, the corporation is a legal organizational device that 1) enables business leaders to raise large sums from numerous investors, 2) enables the investor to place his funds with fair exactness in risk situations of his own choosing, 3) enables the investor to spread his risks or to concentrate them to his own liking, 4) enables the investor to limit possible losses to the extent of his specific investment, rather than to the extent of his personal fortune, and 5) places business operations on a relatively impersonal plane in which sudden impulses of individual owners tend to play a less significant part.

Corporate charter. A corporation must obtain a certificate of incorporation, *i.e.*, a corporate charter, from a particular state as a first legal step in the process of incorporation. The promoters of the enterprise may file papers in a state of their own choosing. This may be the state in which the corporation plans to focus its operations or it may be a state in which restrictions placed upon corporate activities are known to be min-

imal. The charter customarily covers the following items:

Name of corporation, nature of the business, the principal place of business (for legal purposes), the amount of authorized capital stock of each class or type, the duration of the enterprise, the number of directors, limitations—if any—upon the borrowing power of the enterprise, and other miscellaneous provisions.

The following representative excerpts from the articles of incorporation filed by R.C.A. on October 17, 1919, in the State of Delaware, will indicate how broad in scope are the powers our states are prone to confer upon charter applicants:

> The nature of the business or objects or purposes proposed to be transacted, promoted, or carried out, as set forth in the certificate of incorporation, are:
>
> (a) To send and receive signals, messages and communications;
> (b) To create, install and operate a system of communication which may be international;
> (c) To improve and prosecute the art and business of electric communication;
> (d) To radiate, receive and utilize electromagnetic waves;
> (e) To create, manufacture, purchase or otherwise acquire; to hold, own, mortgage, pledge, sell or otherwise dispose of; to invest, trade and deal in goods and merchandise, interests, rights, patent rights, patents, copyrights and other real and personal property of every description in any of the States, districts, Territories or colonies of the United States, and in any and all foreign countries, in accordance with the law thereof. . . .[6]

It is apparent that the articles of incorporation approach the constitution of a state itself in breadth and generality of language. Such is necessarily the case, for the articles of incorporation of a firm are but rarely changed in actual practice.

By-laws. The by-laws of a corporation serve as the internal rules for management. They spell out, in rather specific detail, the procedures to be followed by a corporate group. Like simple legislation or statute law, the by-laws may be changed by the stockholders, or, in some states, by directors, as the occasion may seem to dictate. The following is an illustration of the difference of approach in the corporate charter and in the by-laws of R.C.A.

At Admiral Bullard's suggestion, R.C.A. inserted a citizenship clause and a government official participation clause in the R.C.A. articles of incorporation, as follows:

> No person shall be eligible for election as a director or officer of the corporation who is not at the time of such election a citizen of the United States.
>
> The corporation may by contract or otherwise permit such participation in the administration of its affairs by the Government of the United States as the board of directors deem advisable.[7]

The above 60-word policy statement concerning one aspect of the fundamental law of the corporation was spelled out in the by-laws through a 900-word statement.

Stockholders, directors, and corporate control. Owners of shares of voting stock issued by a corporation normally have one vote for each share in questions that come up for stockholder decisions. A stockholder may vote only at regular or special stockholders' meetings. He may not directly intervene in major decisions being taken by company officers and directors. Stockholders do elect the directors and do amend the charter and by-laws of the corporation at will, however, and may pass formal resolutions concerning other matters of fundamental importance.

A strong management operating a going concern may, in effect, become a self-perpetuating body, however, by controlling the proxy-voting machinery. In these days of widespread stock ownership with small

[6] U. S. Federal Trade Commission, *Report on the Radio Industry,* pages 18–19. Washington, D. C.: Government Printing Office, 1924.

[7] *Ibid.,* page 19.

unit holdings, the men in control of proxy solicitation may run corporate affairs much as they see fit, as long as they are not shown to be conspicuously unsuccessful in their operations when the annual statements of the firm are drawn up.

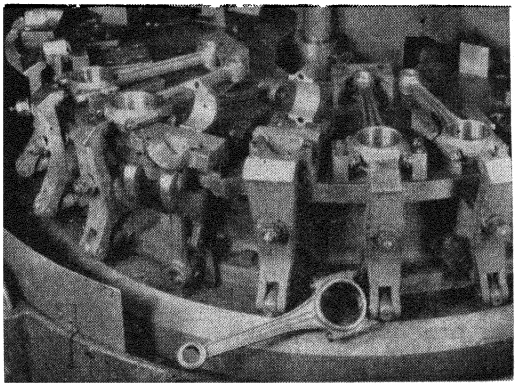
We shall conclude this particular R.C.A. discussion at this point. It may serve to stress again the interrelationship of ideas not only in this book but, more fundamentally, in business as a whole. We noted earlier the relationship of R.C.A. to radio-TV in chapter 4, to the economic system as a whole in chapter 5, and to corporate organization in this current chapter. Departmental organization and activities, which might pertain to R.C.A., G.E., and other smaller enterprises, will form the subject matter for chapters 9 to 15. Taken together, these chapters develop the basic "core" of business administration. They are designed to give the reader an area-by-area look at departmental specialization. Our emphasis will shift back again toward over-all business activities in chapters 16 through 18, when budgets and reports and administrative organization and policy are taken up. An even broader approach to business is adopted in chapter 19 with an analysis of public-relations problems and of the social responsibility of business enterprise. It will develop, further, a number of significant social problems, which we have merely touched upon in this current chapter.

The chapters immediately ahead may also aid the reader in coping with another extremely important concept, which should later be tied in closely with the content of this chapter on legal forms of business organization. A basic consideration, logically preceding the question, "What form of legal organization should this proposed enterprise adopt?" is the question, "Should this enterprise be launched at all, either now or in the future?" Are the promoter's ideas feasible in light of all the circumstances? Is his program correctly oriented? Can he command the tools with which to accomplish the task? There is little reason to set up the legal form at all unless this form is destined to hold the needed content. A home-grown list of discerning questions pertaining to feasibility in any given case may be built up by the individual reader himself as he progresses through the remaining chapters of this book.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	131–132	What role does business organization play in commercializing the ideas and inventions of scientists?
2	132–134	What major factors may be influential in determining which particular type of business organization will prove most suitable in specific case instances?
3	132–134	Why, in your opinion, have the state and Federal governments tended to encourage the growth and development of the corporate form of business organization throughout the past century?
4	132–134	Why is it that "the ability of a business organization to survive a crisis situation may well depend upon foresight exercised at the outset by the promoter of the enterprise as he selected what he considered to be a suitable form of legal organization"?
5	134–142	If banker Pate had been of a mind to make unlimited investment funds available to Ray Diola in 1922, a) what alternative types of radio business ventures might the two men have considered promoting and b) what alternative legal forms of business organization might have proven most advantageous for each such business venture undertaken?
6	134–137	Why, in your opinion, was Ray Diola relatively successful as an individual proprietor in his radio shop venture during the period 1922–24?
7	137–140	What characteristics of the Midvale Radio Sales and Service Company situation enabled Ray and Vic to establish a partnership as the firm's legal form of business organization, in preference to a corporation?
8	140–142	In your opinion, was the case for setting up the Midvale Midget Radio Company as a corporation, rather than as a partnership, a strong one? Explain.
9	142–143	Should "better business bureaus" and various government regulatory agencies limit their securities-market activities to matters of "truth-in-advertising," or should they issue statements to prospective investors concerning the "soundness" and "wisdom" of specific investments? Discuss.
10	143–145	Why, in your opinion, has "a dramatic shift from individual to corporate enterprise . . . occurred during the last hundred years" with the result that "business activity today is dominated by the operation of large-scale organizations under the control of owners and managers of corporations"?
11	143–145	Should either the Federal government or the various state governments limit more narrowly in scope the powers that are now typically conferred upon corporate charter applicants? Utilize the R.C.A. example to illustrate your stand upon this question.
12	143–145	When stockholdings in large "public" corporations, such as R.C.A. and G.E., become widely dispersed among several hundred thousand shareholders, who exercises ultimate control over company affairs and in what interest is this control typically exercised?

9
Elements of Production: Manufacturing[1]



INTRODUCTORY

*THE FIELD OF BUSINESS ADMINIS*tration is divided into two primary parts, namely, production and marketing, *i.e.*, making goods and selling goods. In this chapter 9 and in chapter 10, we shall take up problems of producing or manufacturing products desired by consumers. In chapters 12 and 13, we shall study the flow of these products through established channels of distribution.

At first, we may find it difficult to bring into perspective the massive, yet intricate, production system we wish to observe. It is traditionally far easier to focus upon a fin or the tail than upon the shape of leviathan itself. In this case, the types of goods produced in United States factories are themselves so varied in character and so cosmopolitan in their component parts that it is difficult to boil them down in satisfactory fashion into "representative" strains. A glance at the products and parts catalogues of wholesale suppliers in important branches of trade makes it clear that there are, for instance, millions of automotive parts, millions of electrical supply parts, and millions of machine-tool parts made up of both current production and inventories from earlier models, from which retailers may stock their shelves. The Census of Manufactures lists several dozen branches of trade comparable to the ones used above for illustrative purposes.

Let us assume conservatively that there are at least 50 million different parts of products that must be produced annually in great, though varying, quantities to satisfy the demand of consumers in the United States. We still have not grasped in this one dimension the complexity of the production problem American industry must face. Each of these parts typically requires from 10 to 20 or more separate steps or operations in its manufacture. American production, by one definition, then consists of something like a billion operations, each of which is repeated from one to an almost infinite number of times in the manufacture of a specific quantity of a specific part, which combines with other parts to form a particular product.

Photo at top of page: Connecting rods are finished in quantity on the Blanchard Surface Grinder. See blueprint in chapter 6. (*The Blanchard Machine Company, Cambridge, Massachusetts*)

[1] The approach to production presented in this textbook owes much to the creative thinking of Professor Franklin E. Folts of the Harvard Graduate School of Business Administration.

Yet by another, more constructive, interpretation, the fact that products consist of parts, and that parts-production breaks down into specific types of operations upon specific types of machines, in accordance with specific manufacturing procedures, serves to organize the field of production into a fairly limited number of major types of techniques. Thus, the problems of administration in manufacturing are not beyond the powers of comprehension of the trained production man in industry, nor, given a simplified presentation, even of the nonspecialized reader.

To study production in comprehensive fashion one would have to consider the varying techniques and types of equipment used in all of the major lines of industry. The several dozen major lines listed in the Census of Manufactures include, for example, steel, petroleum, textiles, electrical supplies, rubber, automotive parts, and numerous other well-known industries.

Yet, we may achieve our initial objective of developing a "feel" for production problems and move on to grasp certain fundamental principles of production management by focusing attention in simple fashion upon the operational procedures of a small job machine shop. In taking up problems of metal-cutting through use of standard machine tools, we in no way judge them to be more basic to production or more acceptable for specific purposes than numerous other possible production techniques. We indicate simply that the job machine shop may afford a useful point of departure for our first venture into the realm of manufacturing.

Machine shops and the machine tools housed within them have played a vital role in the unfolding industrial revolution, roots of which trace back to the 17th and 18th centuries. Through their ability to produce the production-type machine tools that have powered our mushrooming factories during the 19th and 20th centuries, job machine shops and, in time, semiproduction machine shops and production machine shops have been indispensable links in the chain of events that has made possible the development of our advanced industrial civilization of the middle 20th century.

SECTION 1: BLUEPRINT READING

Before plunging into machine-tool operation, we must acquire some appreciation of the role played by the blueprint or shop drawing as the language of production. Everyone connected with a production situation, from the plant superintendent down to the newest stockroom helper, should quickly develop the ability to obtain information from engineering drawings and to interpret them correctly to others. Drawing blueprints is an art requiring considerable practice and some talent, but the ability to read blueprints is a skill that is readily acquired by practically any nontechnically trained person.

The blueprint or shop drawing graphically describes the shape of an object by highly standardized symbols, lines, and conventions. It thus approaches a universal language. As the few simple rules of blueprint reading must be rigidly observed in order to gain ease and accuracy, there is no substitute for memorizing the conventional markings, notes, and procedures applied in the exercise of the art. To this routine activity one must add the more challenging task of developing one's capacity to visualize or to imagine a three-dimensional mental picture of an object from inspection of two or three separate views of flat, two-dimensional shop drawings.

Reassuring ourselves with the thought that conventions are learned by memory and that visualization is acquired through practice, let us start with simple blueprints and attempt 1) to determine the shape of the three-dimensional object and 2) to analyze the conventional markings found in the drawings.

The following points may be noted in Lessons One and Two on page 149:

1. The shop drawing shows the three conventional views in their customary order: front view in lower left hand corner, top

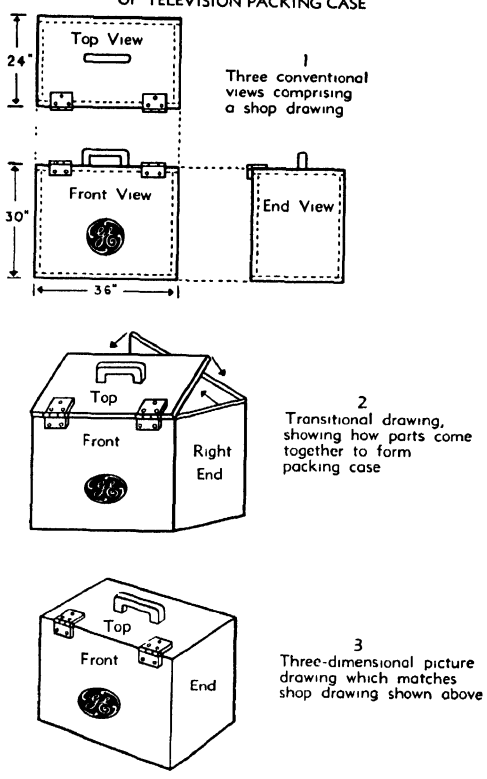


Figure 9–2

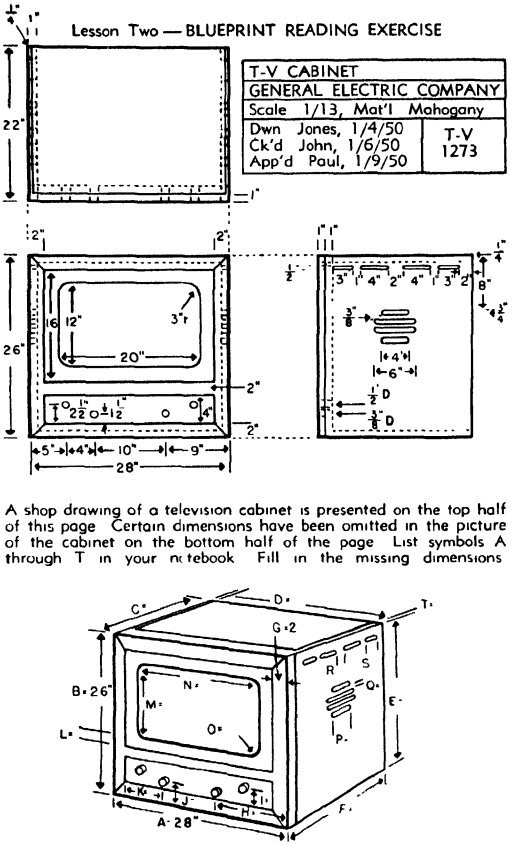


Figure 9–3

view lined up above front view, and end or side view lined up to right of front view. These normal views need not be labeled henceforth.

2. The scale of the drawing and other pertinent material, such as company name, name and number of piece, material, names of draftsman, checker, and approver, with dates, are shown in the legend block. Although drawings are scaled, the student should not attempt to obtain measurements directly by use of a rule. Inaccuracies of reproduction and of closeness of measurement would invariably crop up. Instead the student should read the dimensions listed in the shop views. A competent draftsman will include all needed measurements in his drawings. In rare instances, other measurements must be derived from known dimensions, *e.g.*, by adding or subtracting distances.

3. Visible edges of surfaces are shown by means of solid lines. Invisible edges, *i.e.*, edges of surfaces hidden from the viewer by other surfaces, are shown by means of dashed lines. If an invisible line lies directly behind a visible line, the invisible line is not shown in the drawing.

4. If symmetrical parts of a drawing have duplicate dimensions, it is customary to list the dimensions for one part only.

5. Holes are located in shop drawings by listing the distance from the center of the hole to one or more edges. The distances between two or more holes are listed from center to center.

6. Light lines are used to indicate distances for which dimensions are shown.

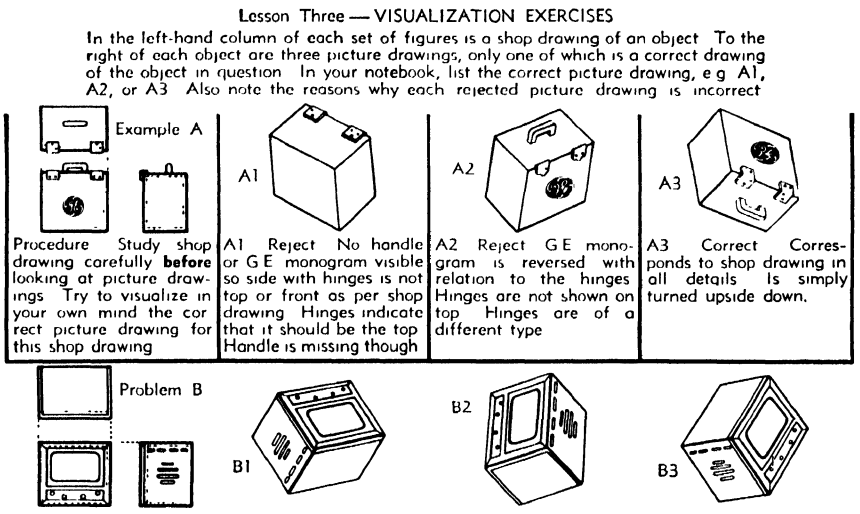


Figure 9-4a

The following points may be noted in Lesson Three:

1. Visualization ability of the type most often exercised by a business executive involves mental transformation of 2-dimensional shop drawings into 3-dimensional picture objects. Numerous occasions arise in which the general manager and his production personnel and even his sales personnel may be required to form preliminary judgments concerning alternative products or layouts without having benefit of an actual 3-dimensional model. Failure to visualize adequately and correctly at such a juncture might result in errors costly both in time and in money.

2. In order to learn to visualize correctly, the student should conscientiously cover the picture drawing portion of Lesson 3 until he has completely analyzed the 2-dimensional shop-drawing set in question. He should also build up a mental image of a 3-dimensional picture drawing from the shop drawings before he looks at any of the

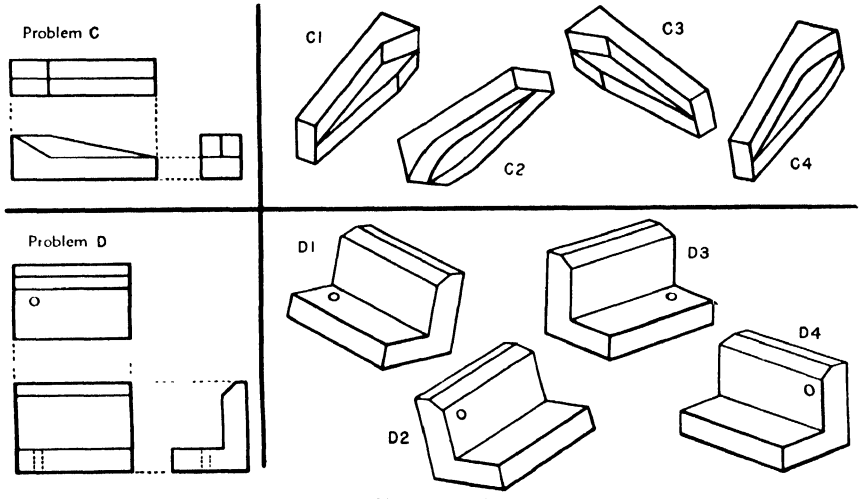


Figure 9-4b

several picture drawings of pieces that are in many or all respects similar to the particular one called for by the shop drawing.

3. By concentrating upon the sequence of shop drawing to picture drawing or to the object itself in all future visualization work (as, for instance, in "finish mark" exercises and in "operation sheet" exercises below), the student of business will, with practice, develop maximum facility in visualization.

Lesson Four: surface finish marks. Rough metal castings and bar stock must be machined on various surfaces in order to be finished to size and to quality specifications. In an orderly shop, a standard marking system is used on company blueprints so that machinists will know which surfaces of an object are to be finished and, in special cases, what quality of finish is desired. If a surface need not be finished in order to permit the object being machined to function properly, then it is wasteful of men and machinery to take the time and effort needed to finish that surface. The same analysis holds true if a fine finish is achieved in situations in which a medium or coarse finish would meet the need just as well.

The most commonly used symbol designating a surface to be finished is an *f* mark placed on a line in all blueprint views in which that particular surface is represented by a single line. In the case of flat surfaces, finish marks never are placed on surfaces that are visible in a particular view. An *f* mark always designates a surface receding into the distance directly in line with the viewer's eye. If a flat surface to be finished appears in all views of a drawing, the finish operation desired will be specified in a special note. If a curved surface is to be finished, an *f* mark may be placed on the line that designates the spot at which this visible curved surface becomes tangent, with respect to the viewer's eye. At this point, the edge of a curved surface appears as a straight line in a drawing. If all surfaces of an object are to be machined, the detailed finish marks are omitted. A special symbol *f*AO tells the machinist that he is to "finish all over" this particular object

Other finish mark symbols are used for special purposes. If a surface is to be finished on a grinder, which gives a very smooth surface finish, the symbol *G* is commonly substituted for the standard symbol *f*. If a firm wishes to distinguish readily among rough, medium, and fine finishes, as well as among ground and other finishes, a series of diamond symbols (△) may usefully be employed. One diamond might indicate a surface requiring a rough finish only. Two diamonds might call for a medium-grade finish. Three diamonds might designate a fine finish. A great many more gradations might readily be brought into the system if a special V mark is used to designate a surface to be finished, and if a code letter (a, b, c, d, etc.) is placed inside the V to indicate the specific type of finish desired.

Some examples of surfaces to be finished are given in the surface finish mark exercise in Figure 9–5.

Lesson Four — SURFACE FINISH MARK EXERCISES

In problems A, B, and C below, identify the numbered surfaces in the picture drawings referred to by the lettered finish mark symbols in the shop drawings. List the letters and their corresponding numbers in your notebook.

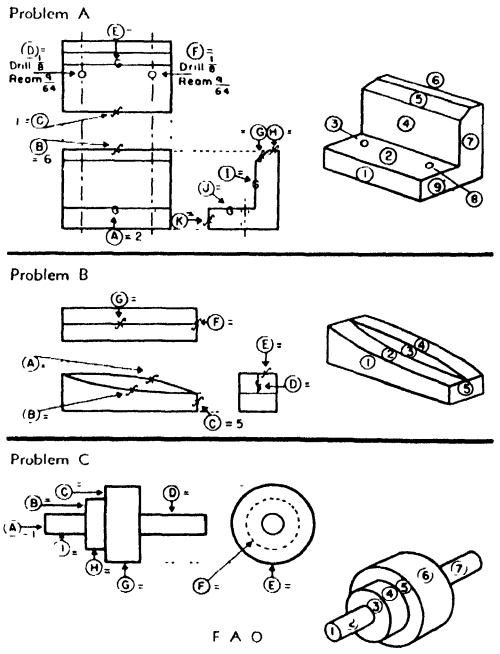


Figure 9–5

Lesson Five: Sections. In the blueprints observed up to this point, the objects in question have been such that they could be described adequately in two or three conventional views. This is not the case, however, when an object contains numerous hidden surfaces that show up only as dotted lines in one or more of the conventional views. It is difficult for the average reader to visualize the relationships represented by a great number of dotted lines in a single drawing. A sectional cut may be made through the interior of a complicated object in order to reveal the actual surfaces contained therein. In a sectional view the metal that would be cut by a knife passing through the object is shaded in with light 45-degree section lines (example 1b, Figure 9-6) in order to show that it is solid metal. A section-plane line (—— – – ——) is used in the conventional views of the blueprint in order to designate where the section cut was made. Letters (*e.g.*, A———A′) are placed at the ends of the section-plane line in order that it might be labeled. Arrows (A A′) are also used to indicate which portion of the sectioned object is included in the section. In the interests of clarity, sections are sometimes revolved 90 degrees or even removed from their normal position and revolved 90 degrees. The examples in Figures 9–6a to 9–6e illustrate the usefulness of sections in clarifying a blueprint. Several section problems are presented in Figures 9–6c, 9–6d, and 9–6e.

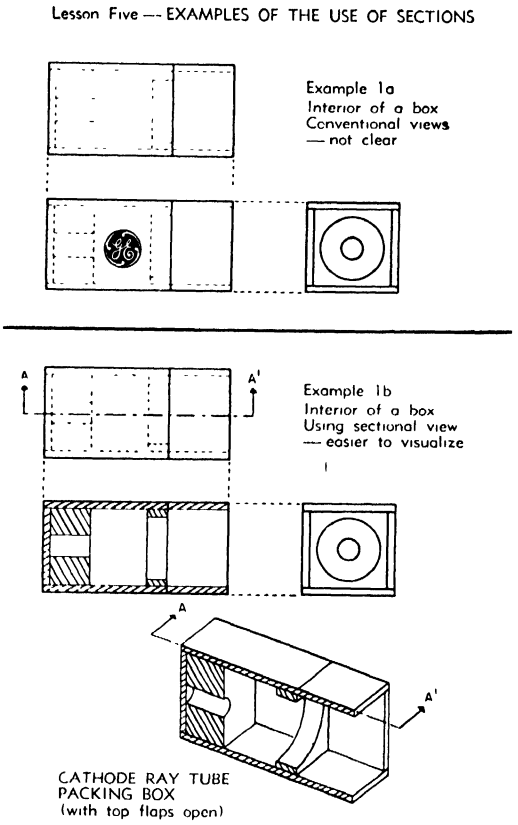
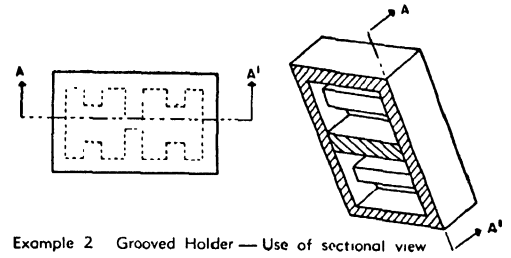


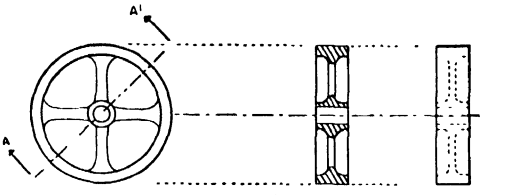
Figure 9–6a

Lesson Six: Limits, tolerances, allowances, and fits. We observed, in Lesson Four on surface finish marks, that it is wasteful of men and machinery to finish a surface that does not require machining in order to permit the object to perform its assigned function. Similarly, in Lesson Six, while emphasizing the need for precision in modern industry, we again must not lose sight of the fact that it is wasteful for a firm to machine a product to precise dimensions if somewhat less precise dimensions would still permit the product in question to function properly. As it is very costly to machine parts to overly-precise dimensions, we must specify for our machinists the exact degree of precision we require and, by the same token, the range for variation we can accept.

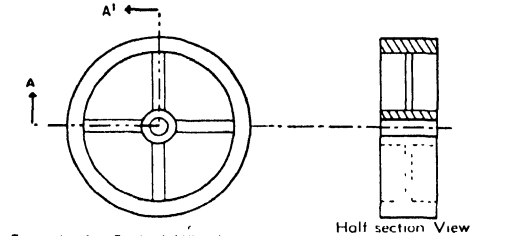
A discussion of limits, tolerances, allowances, and fits in connection with machining operations is literally a matter of "splitting hairs." The average human hair is approximately 3/1,000ths inch in diameter (0.003″). The lathe, shaper, milling machine, and other common machine tools are precision instruments, which enable an operator to achieve accuracy within 1/1,000th inch (0.001″). A grinder is normally accurate down to 1/10,000th inch (0.0001″) and a centerless grinder can hold to specifications within 1/100,000th inch (0.00001″). At this point it might be well to define and illus-



Example 2 Grooved Holder — Use of sectional view



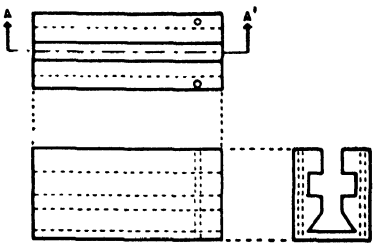
Example 3 Gear Blank



Example 4 Spoked Wheel

Figure 9-6b

Problem B Rail



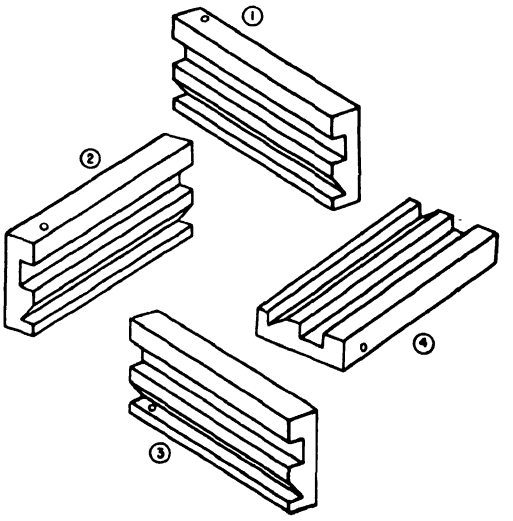


Figure 9-6d

trate the four basic concepts of measurement we are to study in this lesson.

Limits. The smallest and largest acceptable readings represent the limits for a particular dimension. For example, if a steel rod ranging from 2.529″ down to 2.511″ in diameter would be acceptable for a particular purpose, 2.529″ and 2.511″ represent the limits for this measurement.

Tolerance. The difference between the

Problem A Box Parallel The problems presented below consist of a shop drawing with section lines marked, and several picture drawings of sectioned objects that resemble the object presented in the sectioned portion of the shop drawing. Reproduce in your notebook the picture drawing that correctly presents the shop drawing. Cross-hatch or shade-in the surfaces that are exposed by the section plane lines (A—A')

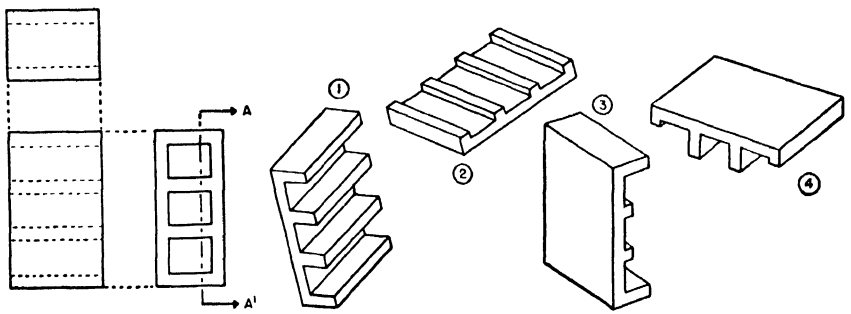


Figure 9-6c

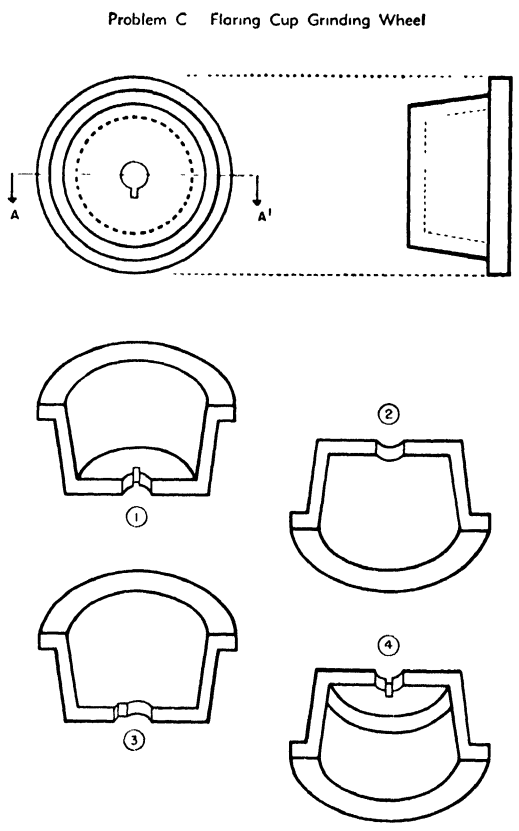


Figure 9–6c

limits for a particular dimension is also known as the tolerance for that dimension. In the example listed above, the difference between the upper limit of 2.529″ and the lower limit of 2.511″ is 0.018″. This tolerance would probably be expressed in this case as a preferred reading of 2.520″ as the basic size with a tolerance of + 0.009″ and − 0.009″. The final form for this expression would be 2.520″ ± .009″.

Allowances. When machinists fit mating parts, such as a spindle and the hole within which one spindle end rotates, they use the term "allowance" to designate the smallest permissible amount of clearance between the largest allowable spindle or shaft and the smallest allowable hole. If the spindle end limits were 2.529″ to 2.511″ and the limits of the hole were 2.539″ to 2.554″, the allowance in this instance would be + 0.010″. The actual play in the opposite extreme might be as high as + 0.043″. Nevertheless, the allowance for these mating parts would be + 0.010″, the clearance between the largest allowable spindle and the smallest allowable hole.

Fits. The size of the allowance between mating parts determines which of eight recognized classes of "fits" a particular situation falls into. In four of the classes, the allowance is positive, as the hole is larger than or as large as the mating part. These classes are "loose," "free," "medium," and "snug." An allowance of + 0.010″, as in our example above, would fall into the "free" category in the American Standards Association scheme. An allowance of + 0.000″ would be "snug." In four other classes, the allowance is negative, for the hole is smaller than the mating part. Heat or force must be

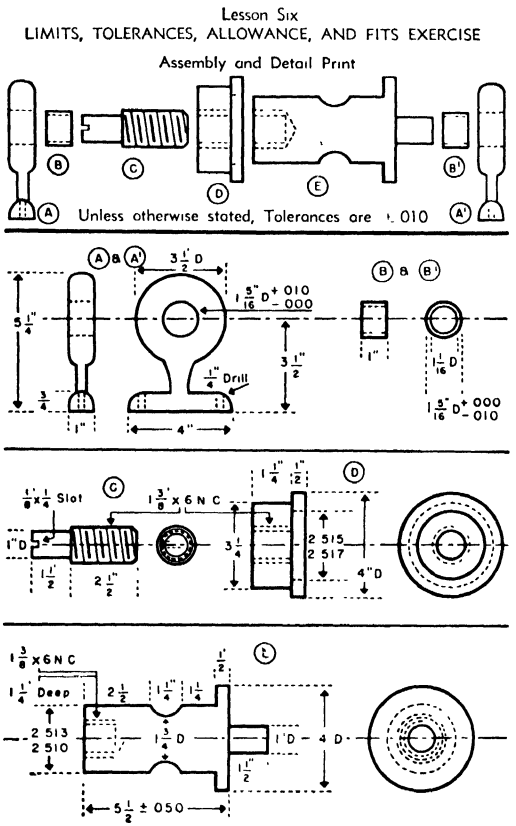


Figure 9–7

used to make the fit if the allowance is "wringing," "tight," "medium-force," or "heavy-force" (or "shrink").

Examples of limits, tolerances, allowances, and fits are given in the exercise in Figure 9–7.

Questions Pertaining to Lesson Six

1. What is the diameter of the large interior thread and of the large exterior thread called for by the prints? (Note: these threads have 6 threads per inch, are of the National Form, and are of the Coarse Series.)
2. Which other dimension is specified to the closest tolerance? Read off the limits for this dimension.
3. Which other dimension is specified to the second closest tolerance? Read off the limits for this dimension.
4. What relationship exists between the parts containing these two dimensions?
5. What might be the purpose of the $\frac{1}{8}$" x $\frac{1}{4}$" slot?
6. What is the diameter of the smallest hole shown in the prints? How is it to be formed?
7. How thick is the actual metal at any one spot in Parts B and B'?
8. What relationships exist among parts A, B, and C? Among parts A', B', and E?
9. What is the over-all length of part E?
10. Why might the $1\frac{3}{8}$" D. threaded hole in part E be termed a "blind hole"?
11. Is the $1\frac{3}{8}$" D. threaded hole in part D a "blind hole" as well?
12. Express the $1\frac{5}{16}$" D. hole in parts A and A' in terms of its limits.
13. Express the 2.515" D. hole in part D in terms of its tolerance.
14. What allowance is provided with respect to mating parts A and B?
15. How great might be the allowable play with respect to parts A' and B'?
16. Might the largest acceptable 1" D. circular end of part C ever be larger in actual measurement than the smallest acceptable $1\frac{1}{16}$" D. hole? What are the limits for the 1" D. end? For the $1\frac{1}{16}$" D. hole? What allowance is provided with respect to these mating parts?
17. Which mating parts have allowances that would fall into the "snug" category?
18. If the $5\frac{1}{2}$" length of part E had no stated tolerance, what flaw might appear in this part that could be attributed to a defective blueprint?

[Note: Two case applications of blueprint reading are presented in Case Section A at the end of the text.]

SECTION 2. MACHINE TOOL MANAGEMENT [2]

We acquired a "nodding" acquaintanceship with basic machine tools while reading of the activities of machinist Sam Reddick in chapter 6. We learned a few basic facts about the role that general purpose and special purpose machine tools have played in building modern society in chapter 7. Now that we have been exposed to some fundamentals of blueprint reading in section 1 of this current chapter, it is fitting that we come to closer grips with the subject of machine tool management. Our study at this point may proceed rapidly by building upon the information and techniques referred to above.

The machine tool has been defined by the Machine Tool Builders' Association as "a power driven, complete metalworking machine not portable by hand, used to remove metal in the form of chips." [3] A machine tool is simply a power-driven machine used to cut or shape metal. Roughly-formed pieces of metal are turned out by steel mills, foundries, and forge shops in approximate shapes and dimensions so as to reduce the

[2] See Orlan William Boston, *Metal Processing*. New York: John Wiley & Sons, Inc., 1941, for detailed descriptions and illustrations of the various categories of machines described in this section. The method of presentation used in this section is that pioneered by Professor Folts.

[3] National Machine Tool Builders' Association, *Machine Tools Today* (pamphlet), Cleveland 1949, page 4.

amount of metal cutting that must be performed by machine tools. This rough object —whether casting, forging, bar stock, or metal block—is mounted on a machine and literally carved into the final shape required. This final shape can be approached with a degree of accuracy that limits errors to 1/1,000 (.001) or even to 1/100,000 (.00001) inch. Pieces turned out under controlled conditions, such as described here, may be interchanged or substituted for one another in assembly or repair, without costly hand fitting. A great many of the social gains of the last half century may be traced back in origin to this one achievement.

Although in actual practice the number and variety of machine tools in use today are great indeed, the basic operations they perform may be narrowed down to the following five methods of machining metal:

1. Shaping (or planing)
2. Turning
3. Milling
4. Drilling
5. Grinding

1. The shaper. The process of shaping or planing metal with a machine tool is similar in principle to the familiar process of planing wood with a carpenter's hand plane. A shaper is a machine tool designed primarily to finish flat surfaces on relatively small workpieces. (See Figure 9–8.) The workpiece is held stationary while the pointed cutting tool is moved back and forth on a reciprocating ram. A chip of metal is removed by the tool with each forward stroke of the ram. The table on which the workpiece is mounted is power fed transversely on a rail after each stroke so that a new surface area may come into contact with the tool during each cutting stroke. The depth of cut (*i.e.*, the thickness of the chip removed) is the distance that the tool point is set below the top of the surface being cut. The number of strokes the ram makes per minute determines the speed with which the metal is removed from the rough

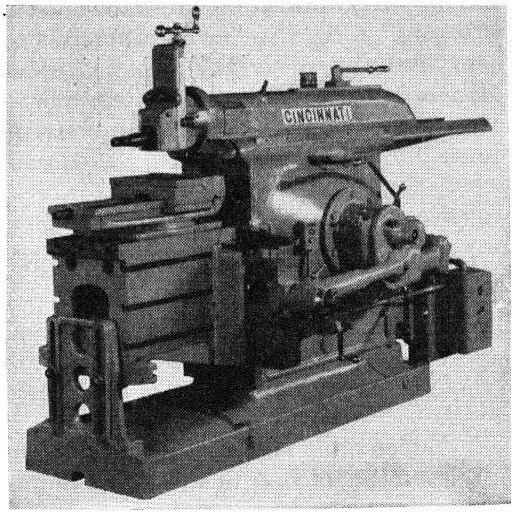


Figure 9–8: 24″ Cincinnati *Shaper*. (*The Cincinnati Shaper Company, Cincinnati, Ohio*)

workpiece. The shaper normally cuts horizontal, vertical, or inclined flat surfaces. Irregular surfaces may also be machined by using special form tools. The workpiece is either clamped to the table or else mounted in a table vise.

If large, heavy workpieces are to be machined, a planer is used instead of a shaper. (See Figure 9–9.) In the planer, the workpiece moves back and forth on a reciprocating table, while the cutting tool is

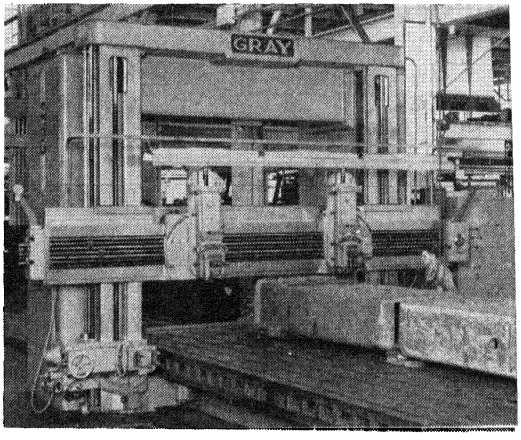


Figure 9–9: 120″ x 96″ x 30′ Gray Heavy Duty Double Housing *Planer*. (*The G. A. Gray Company, Cincinnati, Ohio*)

held stationary on a rail mounted above the table. Heavy cuts, which call for great power, strength, and rigidity, are feasible on the planer. A small planer might have a capacity of 36″ square, but a small shaper might be as low as 7″ in length of ram stroke.

[Note: An exercise involving the machining of a grooved block on the shaper is presented in Case Section A.]

2. *The lathe.* The process of turning a workpiece around a center point while removing metal from its cylindrical surfaces is similar, in principle, to the ancient potter's wheel. This turning machine, known as the lathe, is the father of the modern machine tool family. It can reproduce itself, as well as other machine tools, and can perform a multitude of important machining tasks. (See Figure 9–10.)

The workpiece to be turned is either mounted between two rigid, pointed centers or else fastened to a faceplate or chuck mounted on the power-driven center at the head of the lathe. The workpiece rotates around the center while a cutting tool, which is mounted in a tool post, is brought into contact with the cylindrical surface to be machined. If the long, outside surface of the workpiece is to be reduced in diameter, the cutting tool is fed along the outside surface by the longitudinal motion of the carriage on which the tool is indirectly mounted. If the cylindrical workpiece is to be reduced in length by cutting metal from one end, the tool is fed in for a "facing" cut by a cross motion of the cross slide on which the tool and tool post are directly mounted.

The depth of cut (*i.e.*, the thickness of the shaving removed) is the distance that the tool point is set below the surface to be machined. The cutting speed is determined by the number of revolutions per minute made by the rotating workpiece.

In addition to turning and facing, the lathe may be used 1) for drilling holes by mounting a drill in the tailstock center, 2) for boring existing holes to larger diameter by mounting a boring tool on the cross-slide, 3) for reaming existing holes to accurate dimensions by mounting a reamer in the tailstock center, 4) for grooving cylindrical work by mounting a special form grooving tool on the cross slide, 5) for cutting an external thread by mounting a die head in the tailstock center, 6) for cutting an internal thread or an external thread by mounting a special form cutting tool on the cross slide, and 7) for cutting a taper by using a taper attachment, by offsetting the

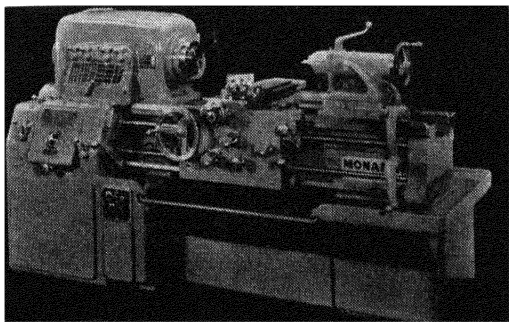


Figure 9–10: 16″ Monarch Series 60 *Engine Lathe.* (*The Monarch Machine Tool Company, Sidney, Ohio*)

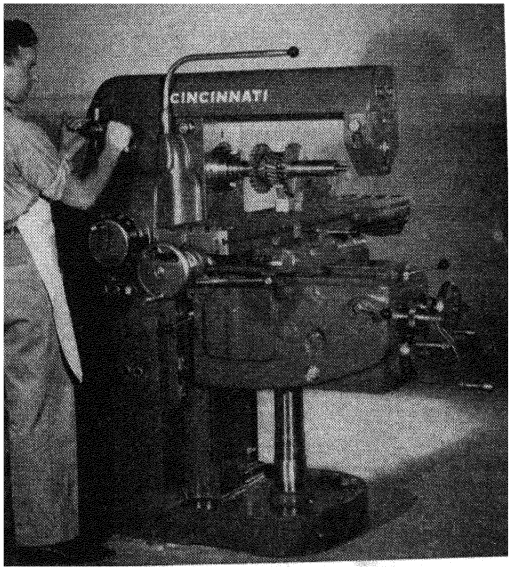


Figure 9–11a: No. 2 MI Cincinnati *Milling Machine.* (*The Cincinnati Milling Machine Company, Cincinnati, Ohio*)

tailstock, or by using the compound tool rest set at an angle.

[Note: An exercise involving the machining of a step spindle on an Engine Lathe is presented in Case Section A.]

3. The milling machine. The process of milling a surface by bringing the workpiece into contact with a rotating milling cutter with multiple teeth is similar, in principle, to cutting wood with a circular saw. A narrow milling cutter might closely resemble a "buzz" saw blade. Other milling cutters may have very different shapes. Helical cutters, for instance, resemble a screw in appearance. A gang of milling cutters assembled to machine several surfaces at once may resemble a set of gears.

Milling cutters rotate on an arbor mounted above a milling table which holds the work and feeds it into the rotating cutters. (See Figure 9–11.) The feed motion is obtained by the longitudinal movement of the table. The depth of cut is determined by the vertical setting of the table with relation to the cutting edges of the rotating cutters. Depth of cut might also be determined by the shape of the cutting tool itself, if a special form cutter were used to mill an irregular type of surface. The cutting speed is determined by the rotation of the arbor spindle in revolutions per minute and by the rate of table feed.

Flat surfaces, rather than circular ones, are usually produced by milling. Special form cutters may readily be used, however, to form contours or curved surfaces of widely-differing sizes and shapes.

As considerable time is consumed in setting up milling cutters, of the exact size and shape required, in proper position on the cutter arbor, the milling machine is to be selected in preference to the shaper for work involving average tolerances only if several pieces are to be machined. Milling is particularly advantageous if several surfaces of the same piece may be machined simultaneously by ganging up milling cutters for multiple cuts.

String or line milling may also be used to increase machine efficiency. In such an arrangement, multiple fixtures are placed on the machine table. One set of fixtures is loaded and unloaded while the cut is progressing on other pieces. If two or more sets of fixtures can be placed side by side across the table, a double set of milling cutters

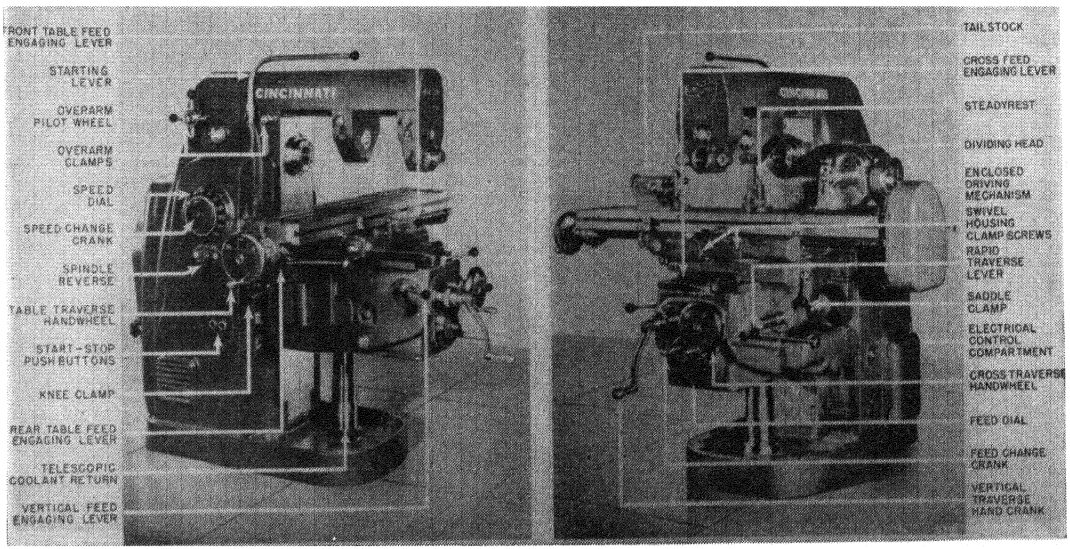


Figure 9–11b: Functional diagrams of the Nos. 2ML and 2 MI Plain and Universal *Milling Machines.* (*The Cincinnati Milling Machine Company, Cincinnati, Ohio*)

can substantially double output in a given milling time.

[Note: An exercise involving the machining of one hundred grooved blocks on the milling machine is presented in Case Section A.]

4. The drill press. The process of drilling a round hole by means of a rotating tool dates back to prehistoric times. A bow drill

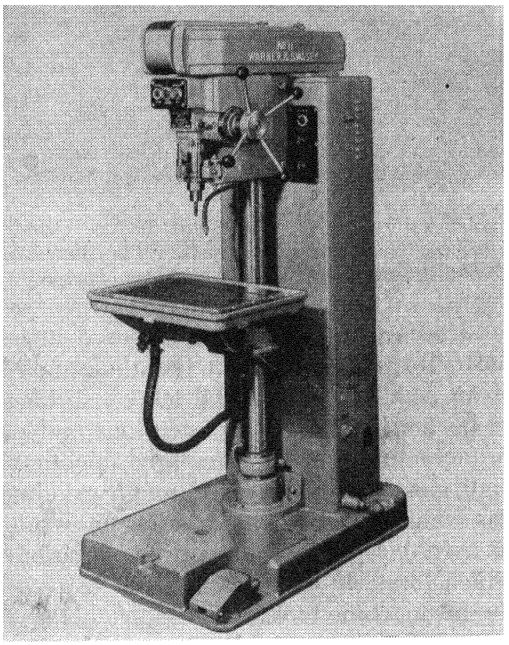


Figure 9–12: No. 11 Warner & Swasey Precision *Tapping and Threading Machine. (The Warner & Swasey Company, Cleveland, Ohio)*

was used by primitive man to start fires by friction as a hard wooden drill was twirled rapidly in a soft wooden board to generate a spark. Drills were used for construction purposes as well by more advanced tribes.

The modern drill press is designed to hold the drill and to provide rotating speed and axial feed for the cutting tool as it accomplishes its task. (See Figure 9–12.) The end-cutting tool normally used in a drilling machine is a twist drill. The twist drill consists of 1) a shank end by which the drill is held and driven, 2) a body containing two twisting flutes or grooves that allow chips to escape and permit fluid to enter, and 3) a point that forms the cutting edge of the tool.

Drilling machines may be designed in widely different styles and sizes to accomplish specific jobs to best advantage. Some models are portable, others stationary. Some are bench type, others have floor mountings; some are horizontal, others vertical. Some have fixed-position spindles, others have adjustable spindles; some are single spindle, others are multiple-gang spindle. Moreover, machines designed primarily for drilling may be used for boring or reaming holes simply by changing cutting tools. They may be used for thread cutting as well by the use of special attachments.

A general-purpose drill press is usually provided with a wide range of spindle speeds and feeds for various types of metal and for various sizes of holes. Cutting speed is measured in revolutions per minute of the spindle. Depth of cut (*i.e.*, the thickness of the metal removed) is set by actual tool size. The workpiece is either clamped to the drill press table or else mounted in a table vise.

We have already observed that it is possible to drill holes on the lathe by mounting the workpiece in the headstock and by mounting a drill in the tailstock. Each hole to be drilled would have to be centered exactly before drilling could commence on the lathe, however, for the workpiece revolves while the tool remains stationary. If a number of moderate-size holes are called for on an operation sheet, they can be machined much more quickly on a drill press than on a lathe.

5. The grinder. The process of grinding away minute chips of metal by use of an abrasive also dates back in origin to ancient times. Grinding qualifies as a true metal cutting process, for the individual pieces of abrasive crystals may be regarded as thousands of miniature cutting tools and the individual metal particles removed show up

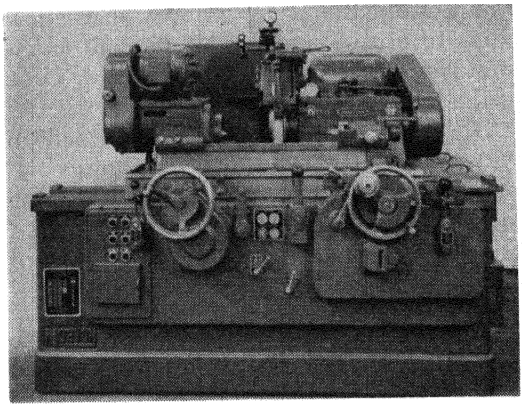


Figure 9–13a: 6″ Norton Type CTU *Cylindrical Grinder.* (*The Norton Company, Worcester, Massachusetts*)

under microscopic examination as clean-cut chips. Grinding machines all have grinding wheels mounted on them, but both the machines and the wheels may take on an almost endless variety of shapes and sizes.

A few common varieties of grinding machines are 1) the cylindrical grinder whose operation somewhat resembles turning and facing on the lathe, 2) the internal grinder whose operation somewhat resembles drilling and boring on the lathe or on the drill press, 3) the surface grinder whose operation in some models resembles that of the milling machine and in other models resembles that of the shaper, and 4) the centerless grinder whose operation is fundamentally different in principle from any of the machine tools we have studied to date. (See Figure 9–13.)

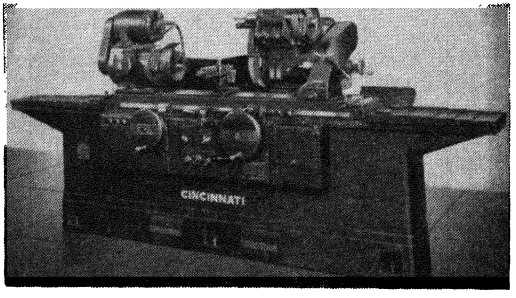


Figure 9–13b: 12″ Filmatic Cincinnati Hydraulic *Universal Grinding Machine.* (*The Cincinnati Milling Machine Company, Cincinnati, Ohio*)

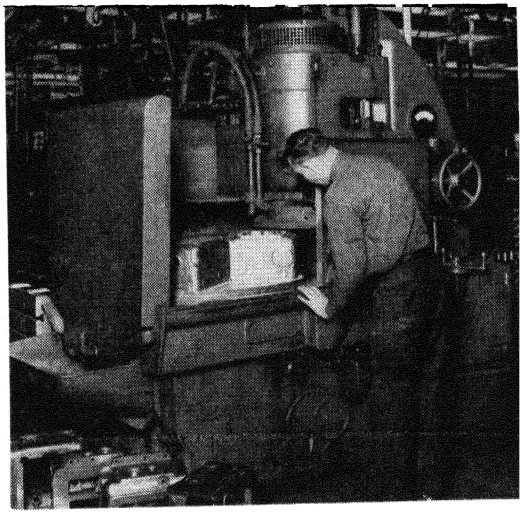


Figure 9–13c: No. 18 Blanchard *Surface Grinder* Finishing Gear Boxes on Chuck. (*The Blanchard Machine Company, Cambridge, Massachusetts*)

Grinding has typically been used in industry to remove the last few thousandths of an inch of excess metal left on surfaces to be finished to close dimensions and on surfaces to have a particularly smooth or high gloss finish. Recently, rough grinding has come into its own. Grinding may now be used to replace rough-cutting operations, which formerly were reserved for more orthodox machine tools.

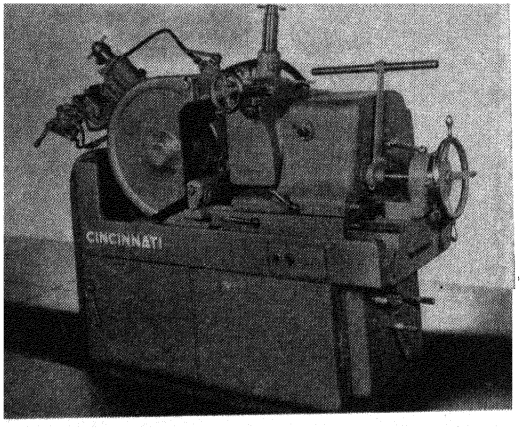


Figure 9–13d: No. 2 Cincinnati *Centerless Grinding Machine.* (*The Cincinnati Milling Machine Company, Cincinnati, Ohio*)

When moderate or small-size cylindrical objects must be ground to very fine tolerances (*e.g.*, ± .00005″), a centerless grinder may be used to accomplish the job. A centerless grinder consists of two abrasive wheels (a larger grinding wheel and a smaller regulating wheel), which keep the workpiece spinning freely between them while they true up its outside diameter so as to make the piece highly cylindrical and true to size.

Turret lathes and screw machines. Turret lathes and screw machines are, simply, modified forms of the basic, engine lathe, which we studied earlier. In both modifications, the tailstock of the lathe is replaced by a turret having four to eight sides or faces, each of which is capable of holding one or more tools. Thus, a new tool or set of tools may be brought into contact with the workpiece mounted in the headstock simply by indexing the turret. One machine operation may follow another in rapid succession without rechucking the workpiece and without resetting the machine tools. The compound rest of the lathe may also be replaced by a second 4-face or square turret. A rear tool post may also be attached to bring still another set of tools into play.

These lathes are called turret lathes if they are designed to hold workpieces placed in a chuck or workpiece holder mounted on the headstock. They are called screw machines if they are designed to hold bar stock fed directly through a hole in the headstock where it is gripped by a collet chuck. The universal turret lathe (See Figure 9–14), which may be found in thousands of machine shops, is equipped to operate both as a turret lathe for chucked work and as a screw machine for bar stock. The process of setting up a universal turret lathe was described in chapter 6.

Semi-automatic turret lathes and screw machines are used in situations in which lot sizes are typically 5 to 50 or more pieces. In situations in which lot sizes are very much higher and in which the type of work

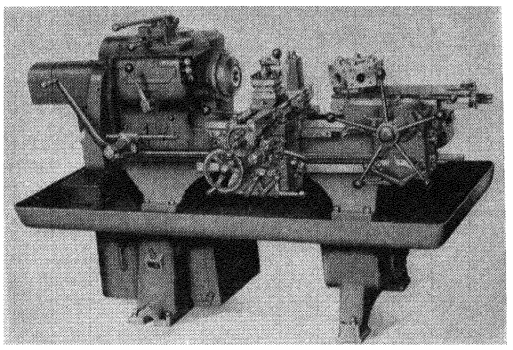


Figure 9–14a: No. 3 Warner & Swasey *Universal Turret Lathe (Ram Type). (The Warner & Swasey Company, Cleveland, Ohio)*

done is highly standardized, automatic turning machines may be used. Fully automatic machines are so controlled that duplicate parts may be produced repeatedly without the constant attention of an operator.

The setup man is the key individual in the operation of automatic machines. The actual operator functions merely as a supplier of raw materials for the magazines or attachments that convey parts to be worked upon to the chuck or the collet of the automatic turning machine. When large numbers of pieces have been turned out, the operator may also inspect them for continued accuracy and truck them away for storage.

One operator may keep several such automatic machines operating continuously.

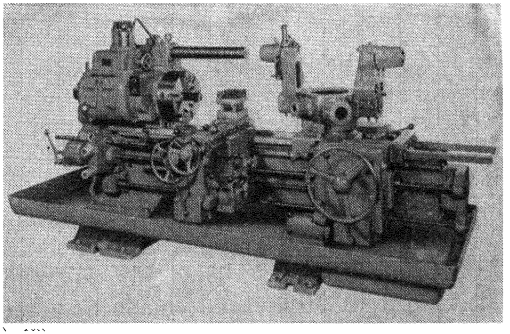


Figure 9–14b: No. 2 Warner & Swasey *Universal Saddle Type Turret Lathe. (The Warner & Swasey Company, Cleveland, Ohio)*

When the number of parts to be turned out is raised to tens or hundreds of thousands, turning machines with a half dozen chucks or collets and a half dozen working spindles, with corresponding toolslides, may be used efficiently. The great initial cost of such specialized machines and the lengthy initial setup time preceding each automatic run may be more than offset by the unit economies achieved under high-volume conditions.

New designs in machine tool building. The trend of development in machine tool design during recent years has been 1) toward the use of modern alloy steels to achieve better wearing qualities, 2) toward the inclusion of greater weight, to reduce vibration, thereby lengthening tool life and promoting greater accuracy, and 3) toward the generous use of filtered oil on moving parts and of coolant on the cutting tool to lengthen operating life. Electronic controls are now an integral part of new machine tools. They permit finer gradations in speed, feed, and depth of cut so that specifications may be met more readily. Electronic and hydraulic refinements render the operation of the modern machine tool as nearly automatic as possible.

The external appearance of machine tools is undergoing "streamlining" in the knowledge that cleanliness and safety are enhanced by such actions, even if the "functioning" parts of the machine remain unchanged. Standardization of small tools and attachments among models and among competing machine tool builders is being pushed for the economy benefits that accrue thereby to machine tool customers. The basic objective of all machine tool research, invention, and development is to produce "machines that will cut costs and enable the operator to devote himself to directing the machine, rather than to doing hard physical labor." [4] These developments increase productivity and enable manufacturers to supply more goods to more people at lower cost.

SECTION 3. ALTERNATIVE METAL-WORKING PROCESSES

Production men do not rest content with mere changes in machine tool design in their quest for manufacturing efficiency. They are continually searching for new methods of turning out work that will meet product specifications at reduced cost and/or with improved quality. In recent years, manufacturers have turned increasingly to alternative metal-working processes, such as pressing, die-casting, and molding, in preference to the more traditional metal-cutting processes. Let us consider briefly some of these alternatives to the use of standard machine tools both in over-all perspective and in specific case instances.

The Press. The press is a machine tool that operates through pressure by a ram carrying the upper die against a bed or anvil containing the lower die. The parts of the die are made of very hard metal and are machined to extremely close tolerances. The workpiece to be pressed is placed between the two parts of the die and is subjected to very heavy pressure. The press (See Figure 9–15) is particularly suited to rapid, low-cost production on a volume basis of flat and formed parts of a wide variety of sizes and shapes. Many complicated parts formerly produced from castings, forgings, or bar stock and subsequently machined on the lathe, shaper, or milling machine are now turned out on the press.

Presses are classified under many different systems, for they are used for a great variety of purposes and the importance of various features differs widely, depending upon particular circumstances. Some presses use manual power, others depend upon gravity, and still others are driven by mechanical power. This power may be applied to the ram by gears, screw action, crank action, toggle action, hydraulic pressure, or in other ways. The press may be used for any one or more of several dozen

[4] National Machine Tool Builders' Association, *Machine Tools Today*, page 15, Cleveland, 1949.

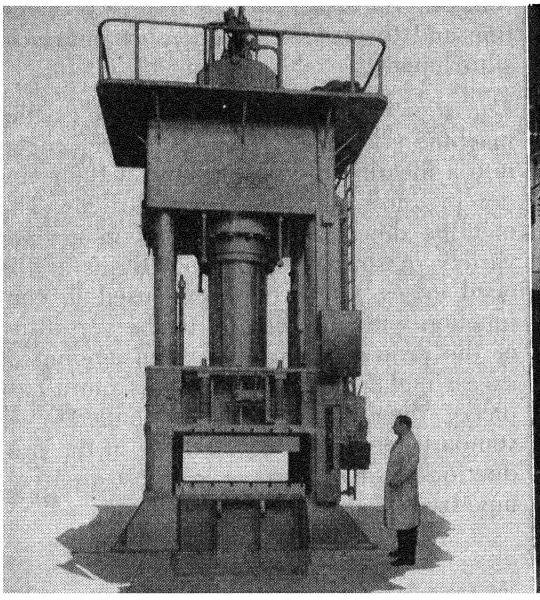


Figure 9–15a: 1200 ton Verson Hydraulic *Transfer Molding Press*

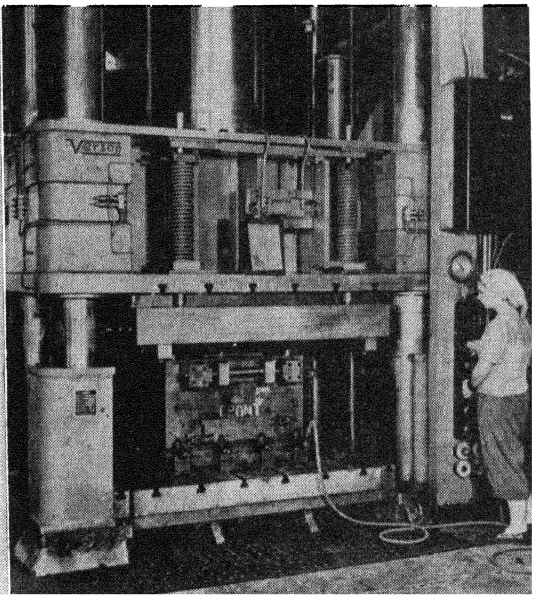


Figure 9–15b: Closeup of Press during compression phase of cycle.

recognized types of operations, including forging, trimming, blanking, punching, piercing, bending, drawing, embossing, or molding

Safety devices are of great importance in the operation of a press. One slip out of a million punches might still cost an operator his hand if automatic safety devices were not built into press work. Safety guards may be installed, which make it impossible to trip the press unless the guard is first lowered in front of the dies. A swinging guard sweeping across the dies may be used to force the operator's arms out of the dan-

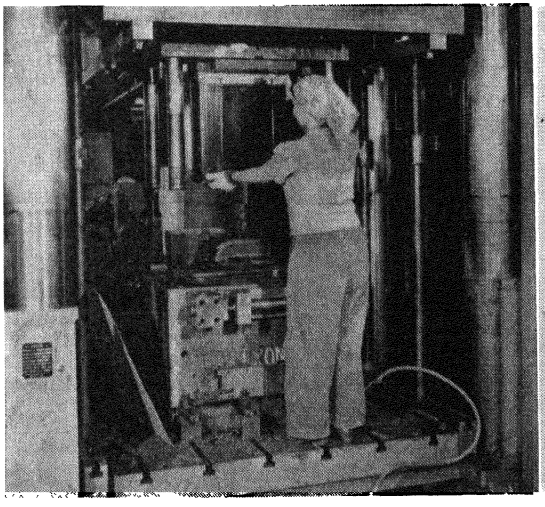


Figure 9–15c: Closeup of Press as work is being stripped from the Punch.

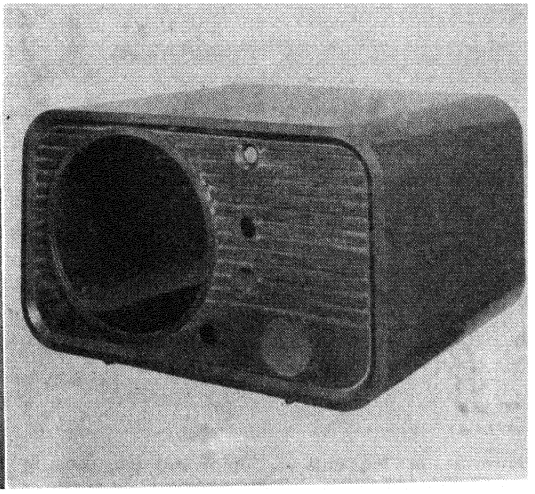


Figure 9–15d: Television cabinet produced in Verson Transfer Molding Press.

(*Verson Allsteel Press Company, Chicago, Illinois*)

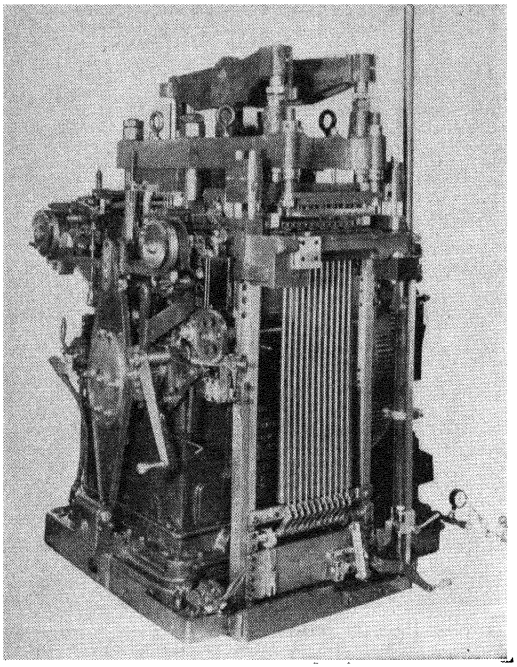


Figure 9–16a: 50 ton Henry & Wright *Dicing Machine*, an automatic high speed press. (*Henry & Wright Division of Emhart Manufacturing Company, Hartford, Connecticut*)

ger area. A photoelectric cell may also be used to restrain the press if safety precautions are not observed. Automatic stock-feeding devices and automatic knockout rods may be used both to speed up operation and to protect the operator from possible injury.

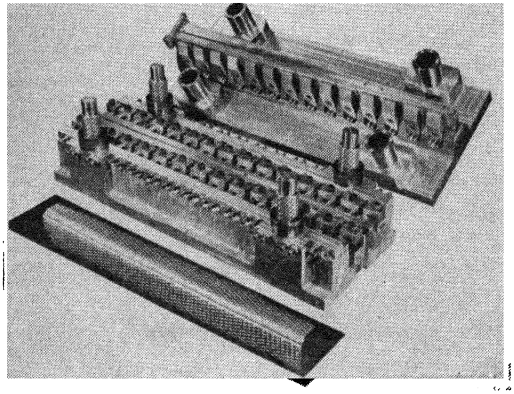


Figure 9–16b: Closeup of Punch and Die used in Dieing Machine and of Plastering Corner Bead produced by it. (*Henry & Wright Division of Emhart Manufacturing Company, Hartford, Connecticut*)

The die-casting machine. The die-casting machine is designed to force molten metal into a metallic die and to hold it there under pressure until the metal hardens. The metallic die may be fashioned in a great variety of simple or intricate forms as the need arises. Cores or inserts used in conjunction with the die add to the versatility of the process. As only a small amount of excess metal must be removed from a cast piece, die-casting offers a challenge to standard metal-cutting methods in the production of small parts at low cost on a volume basis.

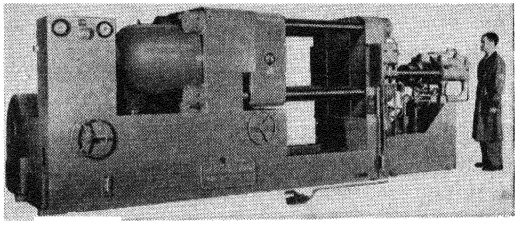


Figure 9–17: H-P-M Model 400-A *Die Casting Machine*. (*Hydraulic Press Manufacturing Company, Mount Gilead, Ohio*)

The die-casting machine (See Figure 9–17) is composed of 1) a furnace and metal-melting pot, 2) a die finished to close tolerances, 3) a die carriage holding the die and permitting it to operate, and 4) a number of auxiliary mechanisms and controls that force metal into the die, close and open the die, and eject the finished piece. High-production die-casting machines may be fully automatic in operation, requiring an operator only to replenish the metal supply, to lubricate the dies, and to check the machines periodically for continued accuracy. As one relatively unskilled operator may tend to several automatic machines, the direct labor cost in die-casting is very low.

The die is the key component in a die-casting machine. The designing of a die is

an intricate task, which requires great ability and long experience in actual die construction. The location of cores, gates, vents, and parting lines is a matter of prime importance in the construction of an efficient die. The number of finished parts a die may produce per hour depends on type of die construction, type of die-casting machine used, type of material used, and the intricacy of the part being cast. Die costs range from approximately $50 for very small parts to many thousands of dollars for large parts of intricate design. Moderate-price dies cost less than $500 and may typically be used in turning out many thousands of castings before their useful life is exhausted.

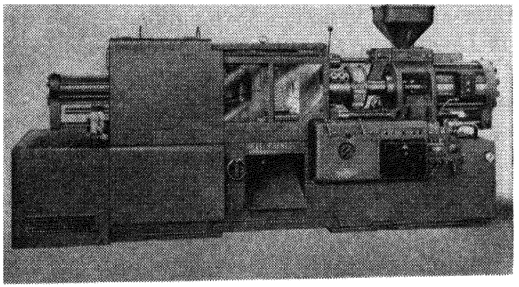


Figure 9-18: Reed-Prentice Model 10D-8 oz. *Plastic Injection Molding Machine* (*Reed-Prentice Corporation, Worcester, Massachusetts*)

The selection of suitable materials for use in die-casting is of very great importance. If metals with relatively high melting temperatures are used, the life of a particular die is very much shortened. Recent improvements both in materials to be die-cast and in materials to form the die itself have opened up new fields of utility for the die-casting process. Alloys now commonly being cast in this manner include tin, lead, aluminum, magnesium, brass, bronze, and zinc. Under certain conditions cast iron and steel may also be die-cast.

Molding nonmetallic materials. Nonmetallic materials, usually those falling into some branch of the organic plastics family, are increasingly being molded in metal dies to form new products that compete successfully in price and in performance with a wide variety of more traditional products. Frequently, the plastic material offers some new feature its older competitors lack, such as resistance to corrosion or an attractive, colored finish. Although their trade names vary endlessly, these plastics tend to fall into a few well-known chemical groupings, such as resinoids, proteins, rubber, casein, and cellulose. These plastics are in one of two basic categories upon being processed. One class, known as thermoplastic, softens when heated and hardens when cooled, each time that it is subjected to heat or cold. Cellulose plastics and vinyl resinoids tend to react in this fashion. The second class, known as thermosetting, softens initially when heated, but upon continuous application of heat becomes permanently hard. Phenolic resinoid and rubber tend to be cured in this fashion.

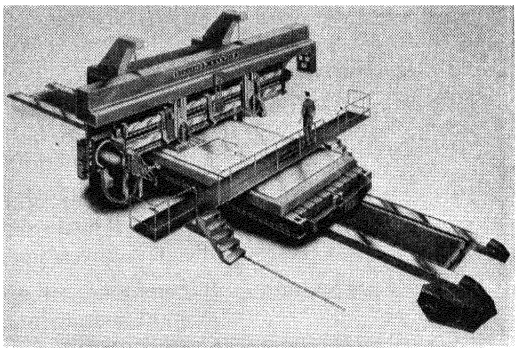
Two principal types of molding are used in the processing of these plastics. In injection molding (See Figure 9-18), thermoplastic material is forced under high pressure from a heating cylinder into the cavity of a mold. It cools rapidly upon contact with the mold walls and is ejected in its final state after a few moments' time. In compression molding, thermosetting materials are placed in a mold and are both heated and held under pressure until softened materials are forced into contact with all parts of the mold. After the materials have cooled sufficiently, they may be removed from the mold. Recent improvements, both in plastics materials and in molding-machine construction, have greatly extended the fields in which plastics and other nonmetallic materials may challenge metallic products.

[Note: Two case problems involving alternative metal-working processes are presented in Case Section A.]

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	147–148	To what extent may the problems of a job machine shop be used to typify problems of production in industry?
2	148–155	What role is played by the blueprint or shop drawing in industry?
3	148–149	Fill in appropriate dimensions in Lesson Two, and review points 1–6 pertaining to blueprint conventions.
4	150–151	Complete the visualization exercise presented in Lesson Three, and review points 1–3 pertaining to visualization.
5	151	Complete the surface finish mark exercise presented in Lesson Four, and review the instructions pertaining to finish mark conventions which are presented in the text.
6	152–154	Complete the sections exercise presented in Lesson Five, and review the sectional view conventions which are presented in the text.
7	152–155	Complete the questions pertaining to Lesson Six, and review the discussion of limits, tolerances, allowances, and fits which is presented in the text.
8	Case Section A	Recommend an appropriate course of action to be followed by the assembly room foreman in Deep-View Manufacturing Company, Case A, in Case Section A.
9	Case Section A	Recommend an appropriate course of action to be followed by the production superintendent in Deep-View Manufacturing Company, Case B, in Case Section A.
10	155–156 & 116–120	Describe the role that the machine tool has played in building modern society.
11	Case Section A & 156–157	Complete Machine Tool Exercise A in Case Section A pertaining to the machining of a grooved block on the shaper, and review the operational characteristics of the shaper which are described in the text.
12	Case Section A & 157–158	Complete Exercise B in Case Section A pertaining to the machining of a step spindle on an engine lathe, and review the operational characteristics of the lathe which are described in the text.
13	Case Section A & 158–159	Complete Exercise C in Case Section A pertaining to the machining of one hundred grooved blocks on the milling machine, and review the operational characteristics of the milling machine which are described in the text.
14	159–161	Review the operational characteristics of the drill press and of the grinder which are described in the text. Explain conditions under which these machine tools might profitably be utilized in preference to the shaper, the lathe, and the milling machine.
15	161–162	What considerations might lead the owner of a large machine shop to invest in fully automatic turning machines as well as in semi-automatic turret lathes and in universal turret lathes?
16	162	What considerations lead machine tool manufacturers to invest large sums for developmental work in machine tool design? Why do they not spend five or ten times as much in this field as they now do?
17	162–164	Review the operational characteristics of the press, and indicate possible advantages which it may afford in the manufacture of certain types of products as compared with some of the basic machine tools described earlier in the chapter.

QUESTION NO.	PAGE REFERENCE	QUESTION
18	162–165	Review the operational characteristics of the die-casting machine, and indicate some basic differences between die-casting and pressing as methods of manufacture.
19	165	Why, in your opinion, has the use of plastics increased many-fold, both in the absolute and in comparison with other materials, during the past dozen years?
20	Case Section A	Recommend an appropriate course of action to be followed by the general manager in Rock-Slide Manufacturing Company, Case A, in Case Section A.
21	Case Section A	Recommend an appropriate course of action to be followed by management in Rock-Slide Manufacturing Company, Case B, with respect to issues raised by questions 1–4 in the case contained in Case Section A.



10 Elements of Production: Manufacturing (*Cont.*)

*WE ARE NOW ABLE TO READ BLUE*prints with moderate facility. We can recognize certain basic machine tools and know some of the types of operations that may be performed readily on specific machines. We have noted some of the factors to be considered in selecting various alternative methods of production in particular instances. We shall now attempt to put some of these component parts together by taking what is essentially an assembly-line approach to manufacturing.

In chapter 9, we were content to visualize picture drawings of a TV packing case and a TV cabinet. In this chapter, we shall pry into the case and cabinet in an effort to see what is involved in making the set itself. We are not concerned, in this connection, with scientific or engineering concepts of electronics. We merely wish to observe those problems of business administration confronting the production man as he endeavors to operate an efficient shop. Such business problems include 1) determining a suitable plant layout, 2) developing efficient methods of work, 3) training employees to perform assigned tasks, 4) achieving control through motion and time study, and 5) regulating operations through use of a production planning and control system.

Illustration at top of page: A massive Skin Mill is controlled electronically with minimum effort by operator on the catwalk. (*Giddings & Lewis Machine Tool Co.*)

1. PLANT LAYOUT

Purpose and objectives. Plant layout involves the development of physical relationships among building, equipment, and production operations, which will enable the manufacturing process to be carried on efficiently and effectively. It is obvious that plant layout is a problem of the first magnitude from the very moment that the idea of a new plant is conceived. Without having at least the broad outlines of future plant layout in mind, the architect and the builder would be at a loss as to how to proceed with the construction of the building itself. It is important to note that plant layout is a continuing problem diminishing little, if at all, in basic importance from year to year in the going concern. In fact, in times of stress and change, when plants that were originally designed for one purpose and one level of activity must be converted for new uses, the problem of plant layout becomes a vital one indeed. In such cases, the rigidities of past commitments both in plant and in equipment tax to the

utmost the ingenuity of the business administrator and his engineering staff.

The objectives of plant layout are relatively easy to define in general terms. Professor Ralph Currier Davis has included the following objectives in his comprehensive list: [1]

> . . . 1) increased turnover of work in process, 2) better customer service, 3) lower investment in manufacturing equipment, 4) more economical use of factory floor space, 5) simplification of control, 6) reduced cost of moving materials, 7) a better quality of product, 8) fewer accidents, and 9) better working conditions for employees.

To achieve these important objectives in concrete case situations is quite another matter. In practice, the guideposts do not all point in the same direction. Twists and turns, and even switch-back trails, typically confront the manufacturer in a given situation, despite a firm resolve to put into practice all of the best principles of plant layout. These principles are none the less valid, even though compromises among conflicting objectives are necessary. As in all important business problems, the administrator dealing with a plant-layout problem must exercise his mind in vigorous fashion so as to visualize the over-all situation. He may then pick and choose a course of action, weighing numerous alternative steps of varying merit, so as to arrive at a satisfactory, long-run solution for the case in hand.

Types of influencing factors. Before considering suitable plant layouts in particular manufacturing situations, let us set up some broad categories of factors that may influence plant-layout decisions. We may then classify particular situations with respect to these categories. This procedure will enable us to compare and contrast the problems of one industry with those of another industry. Reasons for observed similarities and differences in plant-layout practices may stand out more readily if we have a broad frame of reference to draw upon for analytical purposes.

For plant-layout purposes, industries tend to fall into one of two broad categories with respect to *process arrangement.* A process is a series of production operations leading to the completion of the final product. This process may either be "continuous" in nature or it may call for a series of "assembly" operations. In the continuous type, the process cannot be stopped in midstream without serious disturbance or outright spoilage. Cement mills and pottery plants are well-known examples of continuous-process manufacturing. In the assembly type, the process may be stopped at any point with little loss other than time and potential output. Radio-TV plants and auto factories are typical examples of the assembly type of manufacturing.

Continuous-process manufacturing, in turn, breaks down into two basic types of activity with respect to purpose. One type is "analytical" and the other is "synthetic." Manufacture may be analytical in purpose in the sense that the process of manufacture obtains the final product by separating it from a mass of raw material. Oil refining and meat packing, though very different in nature, are both examples of analytical manufacture. Manufacture may be synthetic in purpose in the sense that the process of manufacture obtains the final product by bringing together various ingredients that combine to form a new product. Paint manufacture is an example of this type. It should be noted that some processes combine analytical and synthetic phases. The rayon industry may be cited as a case in point.

Assembly-process manufacturing also breaks down into two basic types of activity. Assembly work may involve similar components and operations, as in clothing manufacture, or it may involve dissimilar

[1] Ralph Currier Davis, *Industrial Organization and Management,* page 174. New York: Harper & Brothers, 1940.

components and unlike processes, as in radio-TV manufacture.

In the area of operations, also, there tend to be two broad categories of industries for plant-layout purposes. Operations are particular steps in the manufacturing process. They may consist largely of repetitive steps on standardized products or of unlike operations on nonstandard products. If operations are repetitive, mass-production methods of manufacture become feasible. A radio-TV plant provides a well-known example of this type. If operations are nonrepetitive, job-lot manufacturing methods must be retained. A job machine shop is an example of this type.

Job-lot manufacture is almost invariably organized on a "functional" or "process" basis in which similar operations are carried on in one place. Mass-production manufacture may be organized either on a functional or process basis or else on a "straight-line" or "product" basis. In a straight-line or product basis, there is a continuous flow of materials in process toward the finished-product stage, and operations are performed in sequence as the work moves physically toward the finished stage at the end of the assembly line.

It should be noted that most plants combine the two basic methods in their manufacturing layout without adhering to either extreme. Complicating factors are to be found in nearly all plants, particularly those that produce diversified products.

Volume of plant output and quantity of

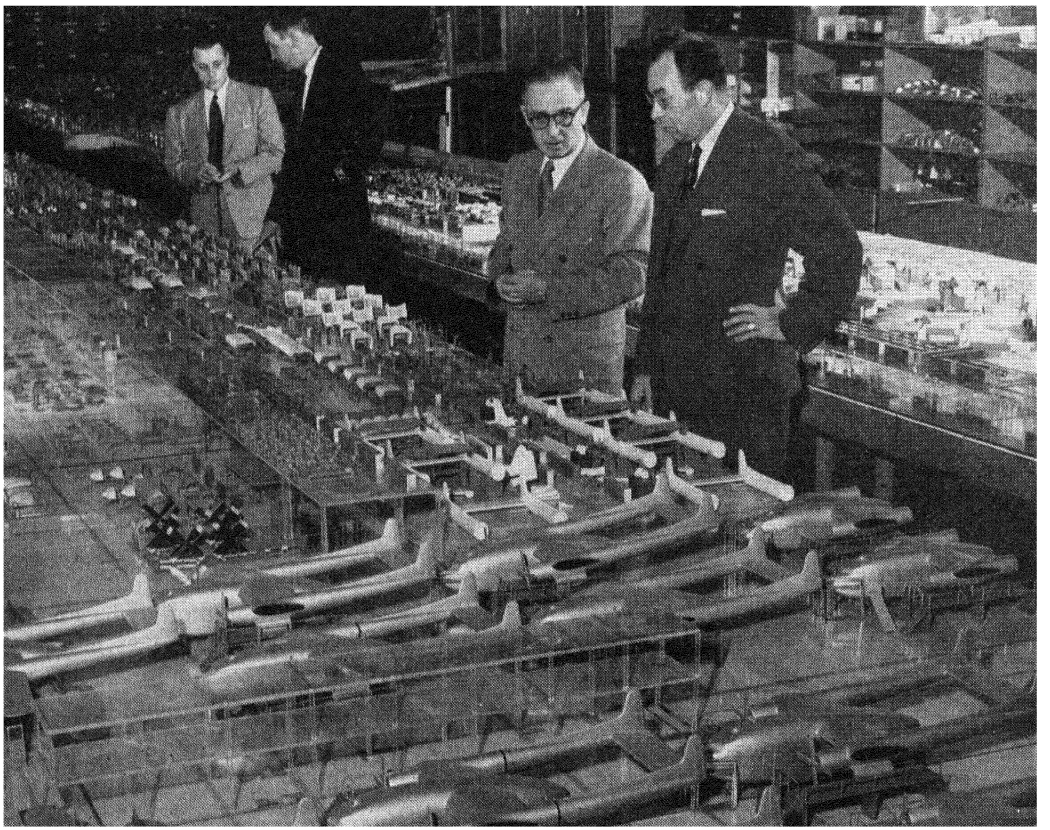


Figure 10-2: Kaiser-Frazer Corporation executives check aircraft conversion progress on 35 x 70-foot three-dimensional scale model of the vast Willow Run plant. (*Kaiser-Frazer Corporation, Fond du Lac, Wisconsin*)

production of each type of product are also important, determining factors of the type of plant layout that will be selected. Mass-production methods may be used economically only if volume is high. The purchase of special-purpose in preference to general-purpose equipment hinges upon the quantity question. The heavy initial cost of mass-production equipment can be recovered only through high-volume output.

The direction of movement in mass-production-line operation need not always be straight and horizontal as is sometimes assumed. If conditions permit, a plant may well be laid out on a horizontal basis, with movement achieved either by hand trucking or by mechanical means, as is typically the case with radio-tv plants. In certain industries, however, the direction of movement is more characteristically vertical than horizontal. This situation is found particularly in flour mills, in which gravity is used to move the product from station to station. Shoe factories also tend to be housed in multistory plants, although here the movement of work in process is accomplished by mechanical handling equipment.

In situations in which it is important that work in process move readily from one department to two or more adjacent departments, or that departments with somewhat similar machines be closely grouped, lateral movements are built into the plant layout, in addition to straight-line horizontal and vertical movements. The diagram in Figure 10-3 illustrates the logic of zig-zag lateral movements in modified line or product layouts.

For reasons of balance in production or of flexibility in production, it might be desirable to have some models of a product move through the department sequence 1, 2, 4 or 1, 3, 4 as well as the more standard 1, 2, 3, 4. A modified line flow will permit ready accomplishment of this objective while retaining many of the advantages of line production. The closely-grouped departments in the modified line diagram might more readily be covered by a single general supervisor or served by a common tool room or service department.

Advantages that may be obtained from line production under favorable conditions include 1) minimizing of internal transportation hauls and elimination of criss-cross traffic, 2) increased use of materials-handling devices that save labor, 3) reduction in manufacturing time from raw material to finished output, 4) reduction in quantity of work-in-process inventory, 5) conservation of floor space, 6) reduction in "bottleneck" tendencies as unity of purpose is more readily apparent, 7) facilitation of production control as product movements tend to become fixed and certain.

These advantages are purchased with the expense of certain potential disadvantages, such as 1) a marked decrease in flexibility, because changes in product require extensive rearrangement of the line, and odd jobs are almost prohibitive in cost, 2) increased investment in equipment, because duplicate

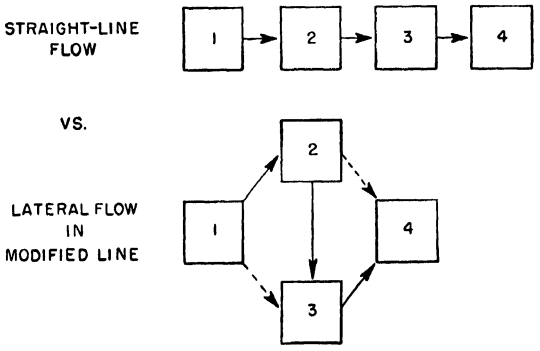


Figure 10–3.

machines may be required at different stations along the line for operations formerly run on one machine, 3) increased difficulty in expanding or decreasing capacity by moderate amounts beyond fixed output points, 4) increased difficulty in obtaining specialized supervision to match specialization in operations, because like functions are scattered along the line, rather than grouped in process departments.

The potential disadvantages of line production tend to correspond to the advantages that may be claimed for functional or process layout under favorable circumstances. The advantages of line layout tend to correspond to the possible disadvantages of functional layout under adverse circumstances. For these reasons, we need not spell out the functional layout picture in detail at this time. In actual practice, plant layouts tend to incorporate line features in some portions and functional features in other portions. This is done in an effort to achieve specific advantages in specific situations, while minimizing the effect of disadvantages that may be involved in too rigid an application of one system or the other. Numerous trial-and-error applications have shown that carefully thought out mixtures of line and functional layouts have considerable merit in practice.

Procedures for developing layout. The steps to be followed in developing a satisfactory plant layout in a specific case are not unlike the basic procedures that would be recommended for use in connection with other important business problems. There is a preliminary stage during which data may be gathered concerning the particular factors thought to be of primary importance in the case at hand. After these data are sifted and weighed, a trial-and-error process of working toward a reasonable case solution may be undertaken. The working hypothesis resulting from this process may be tested, checked, and verified before it is accepted as a desirable plant layout for the individual case under consideration.

The data that should be gathered at an early date in the plant layout process include the following items:

1. A process chart of the manufacturing operations to be performed, using standard symbols (such as ○ for operation, □ for inspection, and ▽ for storage) to highlight the sequence and types of processes required.
2. A priority list of significant considerations and limiting factors suggested by the process under study. This list might include, among other items, a) types of equipment required for critical operations, b) characteristics and location requirements of key groups of machines, c) unusual requirements as to floor space, size, floor strength, working conditions, power, safety, storage, and materials handling, and d) groupings of equipment needed for competent supervision.
3. A projection of the desired capacity of the plant in terms of number and variety of parts, subassemblies, and finished parts to be produced.
4. A formulation of manufacturing policies to be followed by the firm, including, for example, a decision on manufacturing for order versus manufacturing for stock.
5. A weighing of the need for retaining flexibility for adjustment to future increases or decreases in capacity and output.
6. An estimate of detailed space requirements for present and future needs.

A trial layout may then be undertaken in terms of the above considerations to serve as a point of departure for a detailed study of layout problems. Alternative trial layouts should also be undertaken at once to set forth the full range of choice available in the problem situation. The use of visual aids is almost mandatory at this stage. They enable the layout man to visualize proposed layouts in terms of actual operation, without having to install and revise at great expense the actual layouts being considered.

The following visual aids are standard equipment for the plant layout man:

1. An outline plan of the building may be drawn to scale.
2. Templets or patterns, made of heavy



Figure 10–4: Chrysler engineers use scale model of tank hull to determine space needed for machine or conveyor change at the Chrysler Detroit Tank Plant. (*Chrysler Corporation*)

paper or cardboard and drawn to the same scale as the building outline, may represent each machine or machine grouping, service room, and storage area. The various types of objects may be made of different colors.

3. Actual scale models of equipment and machinery may be constructed. The resulting 3-dimensional effect makes it much easier to visualize problems than in the case of 2-dimensional layouts. (Compare 2-dimensional shop drawings versus 3-dimensional picture drawings in the blueprint section of chapter 9.)

4. Colored string may be used to show the flow of parts in process throughout the plant. Plant-layout men may compare alternative routings by measuring the lengths of string involved. They may also use duplicate strings when appropriate to show relative volume of parts passing given points.

The plant-layout man proceeds, with the help of visual aids, to focus down to the most suitable layout that can be designed to fit the conditions of the problem. He exhausts all improvement possibilities before resting his case, trying out various new ideas through trial-and-error modifications. He then checks the final layout against the original considerations that were to guide his work. He makes a detailed drawing of the final layout. These drawings are carefully checked by specialists in various fields, such as architecture, maintenance, personnel, safety, and production. The layout man himself then makes a final check, including a new process chart, a flow chart of operations, and a model of the actual layout. If all goes well at this stage, the layout is ready for physical execution.

G.E.'s Electronics Park development offers numerous illustrations of the great initial and continuing importance of good plant-layout techniques in business enterprise. We need give this topic only brief attention at this time, however, as we have already described several aspects of the Park in chapters 6 and 7.

Construction of the Electronics Park plant required half a million blueprints. Over a hundred engineers spent a full year designing the basic layouts. This original master layout in 1945 had allowed for the eventual employment of from 3,000 to 6,000 persons on all shifts, whereas in the 1950's, the same buildings are being used to house the activities of well over 10,000 employees. This original plan was made for the production of both radio and TV receivers. Just three years later, electronics department management decided to move all home radio receiver work out of the Park to make room for a tremendous expansion in TV assembly needs. This layout was originally designed for the construction of electronics equipment for the armed forces, on a pilot basis only, for an indefinite period. In 1950 and thereafter, volume orders began to flow in from the military, while demand for civilian goods slackened but little, if at all.

The mammoth G.E. receiver building (See Figure 10–5) was laid out from the outset in accordance with line-production ideas. Raw materials and component parts are delivered directly to the building by freight car and truck. They enter the plant at one end in their original state and emerge shortly from the other end as crated TV sets ready for the market. The offices of receiver division engineering, manufacturing, and sales officials also form an integral part of the single receiver building.

Flexibility is maintained in this complex situation by calling into play some impor-

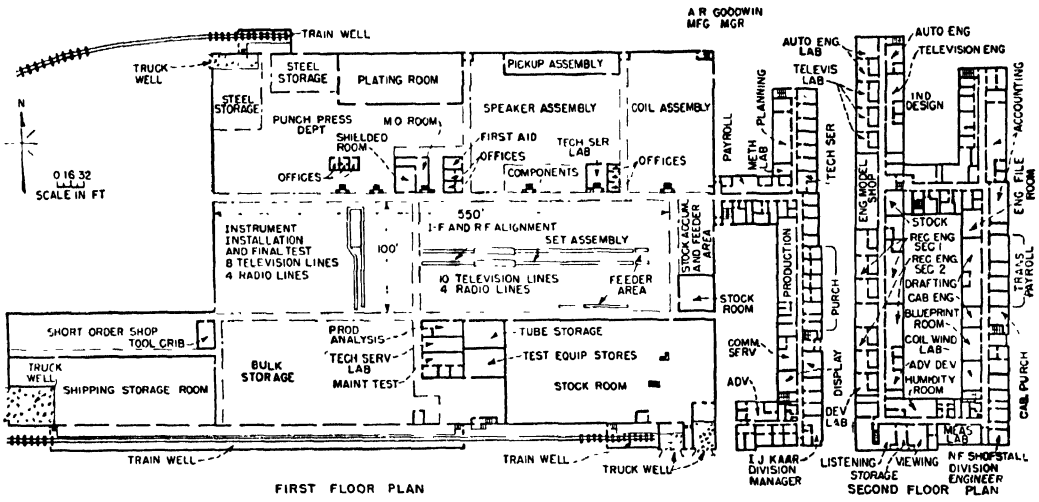


Figure 10-5: Receiver Building Layout. (*Electronics Magazine*, October 1948)

tant design features wisely built into the original plant. As mentioned in earlier chapters, the tile flooring in offices and laboratories is laid on concrete over a system of 6-inch floor ducts, which permits installation of a new power or telephone outlet within a few inches of any desired spot. Over a million dollars was invested in partitions of the Hauserman metal type, which can be set up and removed without structural damage within a few hours' time to accommodate shifting space requirements.

Actual records kept of receiver-building layout shifts reveal that office and laboratory alterations during the first five years of plant operation averaged more than one complete shift for every panel of the Hauserman partitions. If permanent interior walls had been constructed, many of these shifts would not have taken place. In such event, it may be presumed that the receiver division staff would be putting up with the handicap of an increasingly outmoded plant layout. As the situation now stands, about the only limitation on the use of receiver building floor space is the over-all dimension of the building itself (400,000 sq. ft.).

The removal of all radio-production facilities from the receiver building in 1948 was not the only major layout shift experienced in that newly designed building. Time and again, new TV assembly lines were added to the sizeable number of lines already in operation on the floor. All existing lines had to be restudied and rebuilt in part at least twice a year, as new TV receiver models were placed upon the market. Ten-inch round receivers gradually evolved into 24-inch rectangular models. At any given time, the division's product line ranged from simple table models to combination FM-AM radio-TV-phonograph console models with 3-speed record attachment. In 1950 during the 2-week summer vacation shutdown, the line layout of the receiver division was drastically altered to take advantage of engineering ideas that had been worked out in the automobile industry. Hundreds of thousands of dollars' worth of special-purpose conveyor equipment was installed to facilitate the mechanical handling of parts moving to assembly points. TV production is a fast-moving business, both in volume growth and in engineering changes. Plant-layout studies must be undertaken on a continuing basis. The company's stake in the ability and competence of its layout staff is sizeable.

We may conclude that plant layout is an important and a continuing problem for

any industrial firm. Company management must ever be alert to tackle new layouts. Plant and equipment can be accepted as "fixed" items only in the formal accounting sense. We need move equipment only once to correct a specific deficiency. If we fail to make a needed equipment move, we may thereupon move materials and men thousands upon thousands of times to compensate for a given error in plant layout. Time is "money." Time wasted is money thrown away.

2. METHOD STANDARDIZATION

Devising an effective plant layout is only one step in a series of actions designed to yield an efficient, controlled shop. It is equally important that we develop methods of work that will make each individual job easier to do. There are three main phases in the process of making work easier. In phase one, we shall take up method standardization and motion economy. In phase two, we shall train the employee to perform his new work methods. In phase three, we shall time the operator's movements as he performs the assigned task.

It should be understood that these three phases are in reality closely interrelated. Preliminary time studies, for instance, help to determine which particular method and motions are most suitable for a given situation. The employees used in these preliminary studies must be trained to follow whatever method is under study at a given time. A job must be broken down into its basic elements, consisting of groups of motions, before even a preliminary time study can be made. Nevertheless, we may divide this process of making the job easier for the individual worker into the three phases listed above and proceed to study the phases one by one.

A leading pioneer in the field of methods study was Frederick W. Taylor, who sought as early as 1880 to improve the work situation, standardize tasks, train the worker in new methods, and set fair job times through use of a stop watch. Taylor's methods enjoyed spectacular success in industrial situations in which fundamental principles of work efficiency were as yet largely unknown. Taylor's advocacy of incentive wages, rather than fixed day wages, also helped to increase worker output in situations in which his ideas were correctly applied. About the time of World War I, the husband-wife team of Frank B. and Lillian M. Gilbreth formulated the basic principles of motion study, substantially in the form in which they are applied by efficiency engineers today. The Gilbreths also developed the technique of micromotion study, by which motion picture film is used to obtain accurate time values for fundamental motions. The name "therblig," which the Gilbreths coined to denote subdivisions of work effort common to all kinds of work, is, fittingly, Gilbreth spelled backwards with a euphonic reversal.

Both Taylor and the Gilbreths found that the standardization of job methods and of motion patterns typically resulted in greatly increased efficiency throughout an organization that had previously overlooked possibilities for improvement. Output was considerably increased even before the wage incentives, which brought forth increased effort from each worker, were called into play. This improvement is not really surprising. If operators have been left to work out for themselves the way in which they will utilize the equipment, tools, and materials, the average individual will have adopted some inefficient practices and will have developed some cumbersome habits.

A trained methods engineer need not be a skilled operator himself on a particular production line in order to improve improvised methods. In some instances, the methods man needs only to standardize for all operators the operation sequence and motions followed by the most highly skilled operators on the line. In other instances, the methods man may correctly decide to change the working practices of even the best operators, to conform more closely to accepted principles of motion economy. Methods engineers are particularly adept at

reorganizing the immediate workplace by providing holders for work and for tools, by providing gravity-feed chutes for raw materials, and by providing drop-delivery chutes for finished goods. They may also eliminate operations or reduce distances to be covered by the worker in the performance of operations.

Method standardization denotes the achievement of the best feasible conditions with respect to all of the physical factors affecting an operation. We shall assume that our plant-layout problem had earlier been resolved in accordance with the considerations outlined at the start of this chapter. We may still wish to examine existing equipment with a view to suggesting improvements or repairs.

Standard methods are dependent upon standardization of machines within each class and upon proper maintenance of each machine to permit maximum quantity and quality of output. Tools, also, must be properly selected, standardized among operators, and kept in good repair. Materials should be of a grade that will produce a satisfactory product at a reasonable cost. They should also be as uniform as practicable to permit standardization of operations performed.

The departmental layout within the broader plant layout should be carefully reviewed by the methods man. Operators using equipment should have ready access to toolrooms, materials storerooms, and other service centers so that the flow of needed parts will be steady and assured without involving wasted effort. The total environment of the workshop should be a matter of prime concern for the methods man. Ventilation, light, warmth, noise, and safety conditions need to be as favorable as "immovable" limiting factors will permit. "Human relations" within a plant can be fully as important in the total picture as physical relationships, particularly if these human relationships between management and employees happen to tend toward the negative side.

If methods standardization and motion economy are properly introduced within a plant, they can go a long way toward achieving closer labor-management cooperation. Much employee dissatisfaction springs, indirectly at least, from an awareness of inefficiency upon the part of management. With methods standardization and motion economy established as important goals, management comes under greater pressure to provide the operator with the machines, tools, and materials needed to do the job efficiently and well. If the firm profits from increased output at lower cost and if the operator shares in these benefits through increased earnings, then one important source of basic antagonism between labor and management will have been mitigated.

Motion economy goes hand in hand with methods standardization and plant layout in an effort to achieve movements which are direct, simple, and easy to perform with rhythm, accuracy, and speed. Motion study frequently suggests the wisdom of providing jigs, fixtures, and other mechanical aids to speed performance while, at the same time, lessening worker fatigue. The elimination of nonproductive motions also results from the application of the principles of motion economy to specific manufacturing situations. Some of the fundamental principles of motion economy established by the Gilbreths and verified by later experimenters, such as Professor Ralph M. Barnes, may be listed as follows:

1. The most effective method is usually the performance in proper sequence of a minimum number of fundamental motions.
2. Motions should be confined to the lowest possible classification of body elements in the following scale in order to reduce fatigue: a) finger motions, b) finger and wrist motions, c) finger, wrist, and forearm motions, d) finger, wrist, forearm, and upper arm motions, e) finger, wrist, forearm, upper arm, and shoulder motions.
3. The motions of both arms should preferably begin simultaneously, follow symmetrical paths, and be opposed in direction in order to ensure rhythm and eliminate overlapping motions.

4. Both arms should preferably complete their motions simultaneously to ensure rhythm, but both arms should not be idle simultaneously except during rest periods. If idleness is unavoidable, a mechanical aid should be sought to take over the task which causes loss of labor time.

5. Each classification of hand and arm movements should be confined to a normal work area for that classification. Equipment, tools, and materials should be so located that the expenditure of energy by the operator can be minimized. Tools, materials, and fixtures should be pre-positioned, if possible, so as to reduce the need for searching, finding, and selecting, before positioning.

6. The hands should be relieved of all work that can be done by mechanical aids or by other parts of the body. Jigs and fixtures should be incorporated whenever feasible. Foot pedals, gravity feeds, and drop delivery chutes should replace hand operations in repetitive situations.

Numerous other principles of motion economy might be cited in a comprehensive list,[2] but the above examples will suffice for our immediate purpose.

Once supervisors and operators have been made "methods conscious" by the methods engineer, numerous improvements may be achieved throughout the plant, regardless of the fact that most of the participating members will still not be able to reel off motion principles.

[Note: An illustrative case on motion economy is presented in Case Section A.]

3. TRAINING IN WORK METHODS [3]

The director of training for the Midvale Midget Radio Corporation participated in an intensive course for junior supervisors held just prior to the establishment of a new attic TV aerial line. He outlined the training functions the supervisors would perform during the next few weeks, namely the instruction of groups of employees in new assembly tasks, such as the bolt and washer subassembly outlined in Case Section A.

The director defined job training itself as a process of helping other persons to acquire new knowledge and skills that the instructor already possesses. The training formula in almost any situation consists of telling, showing, and guiding employees in the performance of new tasks and of checking upon results

Training within industry. In illustrating specific steps in training, the director used as his example the bolt and washer subassembly, which was now common to the experience of all supervisors in the class. He indicated the importance of preparing in advance, of putting the learner at ease, and of following the 4-step training formula of tell, show, practice, and follow up.

One indirect way to win learner confidence is for the instructor to be so thoroughly prepared in advance that he is completely at ease himself. The instructor should have readily at hand in good order all of the instructional aids he plans to use. In the bolt and washer subassembly, these aids would include several handfuls each of bolts, lock washers, plain washers, and leather washers, as well as several fixture boards, gravity feed trays, and disposal boxes, plus a stop watch and some note paper. The instructor might also have on hand a motion picture projector and a film illustrating the various steps in the assembly for use at the appropriate time. Above all, the instructor should have a detailed lesson plan with rough time allotments for each step in the sequence.

In step 1 (*tell*), the instructor should first put the learner at ease in some natural, friendly manner. For instance, the story of going all the way through an assembly se-

[2] See Ralph M. Barnes, *Motion and Time Study*, page 110. New York: John Wiley & Sons, Inc., 1937.

[3] For a highly readable treatment of this subject, refer to Kenneth B. Haas and Claude H. Ewing, *Tested Training Techniques*. New York: Prentice-Hall, 1950.

quence with a new worker only to find at the end that he is left handed has some interest for new learners. The instructor should later point out that this difficulty is readily overcome by sitting opposite the learner so that he will receive a mirror image of nonsymmetrical operations.

As part of this same step, the instructor should make the learner aware of the need for instruction. He might point out that the members of his own class did not work out the final improvement in the assembly sequence that he is going to show them until the instructor hinted about its possibility. This might also serve to interest the learner in the bolt and washer assembly that he is about to learn. Telling of its specific use in the TV aerial might be of help as well.

The instructor should also go on to show the learner the importance of success to himself. He might point out that the correct method is much easier to perform, is faster, and is less fatiguing than would be a less carefully worked out substitute method.

Before explaining some of the principles of motion economy involved in the bolt and washer subassembly, the instructor should find out what the learner already knows about this topic. He may then pitch his own presentation at the proper level.

In step 2 (*show*), the instructor should start with easy materials, presenting them in a clear, nontechnical manner. Operations should also be presented one at a time, and in the correct learning sequence. In the illustrative subassembly, the instructor should first focus upon proper layout of workplace and of materials. He might point out the great advantage of the fixture as a holding device, compared with using one hand simply for holding while doing all the washer pick-up and assembly work with the other hand.

The instructor should then tell the learner the steps in the actual assembly, demonstrating motions as he describes them. These should be repeated until the process is firmly fixed in the learner's mind. One of the surest methods of putting instruction across is repetition, provided that the learner's interest is held during the process.

The instructor should stress key points in the assembly process as he goes along. In our subassembly, for instance, a key point would be to slide the washers along the board toward the holes rather than to lift them.

The subassembly sequence we have selected may be mastered by the learner at one sitting. If the subject matter were more difficult or complex, however, the instructor might wish to divide it into two or more lessons, rather than attempt too much at one time.

In step 3 (*practice*), the learner should be asked to perform the steps of the task himself under the watchful guidance of the instructor. The learner should explain each move as he makes it, pointing out each "trick of the trade" or key point that may be involved. The instructor should patiently insist upon correct sequence and timing of moves and not be satisfied with a defective presentation. There is a well-known slogan that "practice makes perfect." It should be stressed that practice actually does make perfect only if the method practiced is correct and if the learner practices with the intent to improve. Reinforcing wrong habits is worse than not practicing at all.

In step 4 (*follow up*), the instructor should thoroughly test and check upon the understanding the learner has of his new job and upon accuracy of performance and speed of movements. This is the stage in which errors should be ferreted out and corrected by the reteaching of whatever steps may be involved. Consistently high standards should be upheld by the instructor in the follow-up stage before the learner is launched on his own. Credit should be given when due, as well as constructive criticism. The learner should know just where he stands at each stage in the learning process. As he becomes a full-fledged production worker, his supervisor on the job should encourage the worker to come to him for advice and counsel and

should encourage the trained worker to advance suggestions of his own as well.

The learning curve.[4] The nature of the typical learning curve, to which we referred in chapter 6 during the training of Grace Stolski, may be re-emphasized briefly at this point. In the initial stages of instruction, when the task is novel and when the learner can draw upon already-acquired skills and knowledge that are transferable to the new task, progress in the rate of performance is most rapid. There is a tendency to slow down in progress as the learning process goes on. A period of apparent levelling off of improvement, known as a plateau period, then follows. This period is typically encountered shortly after the learner's performance reaches a level that is "socially acceptable." After a period of consolidation and regrouping under the surface, it frequently happens that the initial plateau level gives way to further improvements in performance. This breaking through of an apparent ceiling is to be found particularly in situations in which motivation and drive continue to be high. Ultimately, the learner approaches the physiological limit to his learning ability, and his learning curve again tends to level off. The discovery of new methods at this point might further increase output substantially. In effect, such a discovery would create a new learning curve, at least for a portion of the performance cycle.

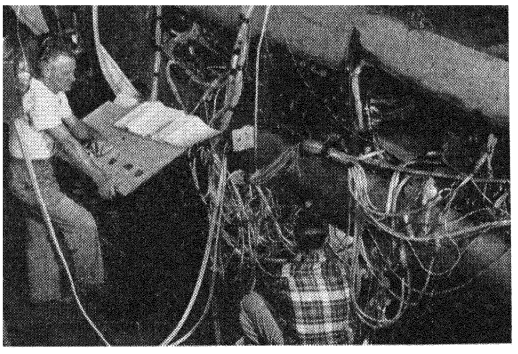


Figure 10–6: Methods standardization, employee training, and performance inspection are of prime importance in mass production of intricate F-86 Sabre jet fighters. (*North American Aviation, Inc.*)

4. *TIME STUDY*

Plant layout, methods standardization, motion economy, and worker instruction all suggest the use of time study to establish whether a particular development represents an improvement or a regression in terms of efficiency. Stop-watch time study has been defined by Professor Marvin E. Mundel as a method "used to find the amount of time necessary to accomplish a unit of work, using a given method under given conditions of work, by a worker possessing a specified amount of skill on the job and a specified aptitude for the job, when working at a pace that will produce, within a unit of time, a specified physical effect upon him."[5] The time obtained by this method is called "standard time."

Time studies may be used for many other purposes in addition to the four listed above. As we shall see later in this chapter, 1) time studies aid in the setting of production schedules for use in production planning and control and for use in promising delivery dates. 2) Time studies may aid supervisors in particular departments by furnishing data required to achieve control over the problems of their men, machines, and methods. 3) Top supervisors may gage the operating efficiency of the entire plant in the same basic manner as in 2) above. 4) The standard pace to be expected of workers throughout the plant may be established more objectively

[4] See Col. William Line, "The Learning Process," *Studies in Supervision*, Cameron D. Ewen and H. Graham Ross, editors, McGill University, pages 77–95. Montreal: Plow and Watters Limited, 1945.

[5] Marvin E. Mundel, *Systematic Motion and Time Study*, page 128. New York: Prentice-Hall, Inc., 1947.

through use of time-study standards than through other rule-of-thumb methods. 5) The distribution of workers within departments and along production lines may be made in a manner that will encourage an even flow of production if decisions are based upon careful time studies. 6) Equipment may be distributed in the same manner as in 5) above. 7) Standard costs that will prevail under normal operating conditions may be determined in advance through use of time-study methods. 8) Costs may be predicted with reasonable accuracy for jobs that have not yet been performed. The use of "synthetic" times, built up by the grouping of known time values for small units of operations, such as grasp, position, release, may provide a basis for predicting both the time required and the cost incurred in performing a new job. 9) Time studies may also serve as a basis for setting up incentive wage systems under which operators are rewarded for high-level production by extra earnings.

Times could be set for the above purposes without making scientific time studies. For instance, management might predict times for certain jobs by comparison with detailed records of past performance. Management might arrive at its time estimates by sending trial runs of the product through the manufacturing process. The estimates of an experienced foreman or of a group of supervisors might be used. It can be readily seen, however, that these methods of estimating time standards have serious inherent defects.

Times recorded for jobs in the past would be valid only *if* 1) the method used were the same, 2) the work conditions prevailing were the same, 3) the workers involved possessed a fixed amount of skill on the job and a fixed aptitude for the job, and 4) the pace at which operators worked was known to be average. Trial runs would yield valid times only if conditions were average overall. This critical fact can be ascertained more readily through judging the operation element by element than by venturing an over-all opinion directly.

The estimates of an experienced person or group of persons are no better than the background data from which the estimates are derived. Even if the estimates prove to be shrewd ones, they are so subjective in nature that they may justifiably be challenged by other parties at interest, such as union representatives or prospective customers. On the other hand, the estimates arrived at may be unfair to management if the plant had not in the past realized its full potential. Standards might be set at a level far below the average pace of the average worker.

Granting that standard time should be 1) consistent, 2) honest, and 3) representative of a performance that can be exceeded readily by an average worker who is reasonably motivated, an issue remains as to just how well a "scientific" stop-watch time study can achieve these objectives. We shall be better prepared to form a judgment on this score after we have studied 1) the basic steps involved in making a time study and 2) the basic policies that a firm should observe in applying time-study standards.

Five recognized steps in the making of a time study may be listed as follows:

1. Checking the method prescribed for the operation to see that the principles of methods standardization and motion economy are followed. (See section 2 of this chapter.)
2. Making a record of a) the method to be followed in the job, b) the environmental conditions associated with the job, and c) other data needed to reconstruct the total situation at some future date.
3. Recording the element times that represent the movements of an individual operator in the correct performance of the job.
4. Relating the performance actually observed to the agreed-upon standard for measurement of pace by rating the pace set by the individual operator.
5. Relating the job actually observed to the agreed-upon standard for job difficulty by evaluating the comparative difficulty of the job observed so as to arrive at suitable allowances.

Recording method, conditions, other data. As we are already familiar with procedures involved in checking the method to be used (see section 2), we may turn directly to the problem of recording descriptive data pertaining to the job being studied. For time-study purposes, the method being used should be broken down into well-defined elements. An element is defined by Professor William R. Spriegel as "a single continuous and distinct motion or motions of a worker or machine of relatively short duration, the termination of which is indicated to the observer through sight, sound, or touch." [6] It may be thought important that the first motion of an element be easily discernible as well. As time-study elements follow each other without pause throughout the cycle, however, the termination point of the last motion of one element automatically marks the commencement point of the first motion of another element. An element should be relatively brief in duration and as homogeneous as possible in the motions it encompasses. It is important that the nature of each element be clearly set forth in the record to facilitate later analysis. Hand- or operator-controlled elements should be separated from automatic or machine-controlled elements, because the former tend to be variable, whereas the latter tend to be constant. Elements that occur in every cycle should be separated from elements that occur only occasionally. The latter motions are a legitimate part of the job, but they must be averaged out over a number of cycles.

Every thing that the operator does in connection with the job being studied should be recorded. These data are essential if the time study is to stand up upon being questioned at some later date. The name and check number of the operator, his department, the name and number of the part being made, the name and number of the operation being studied, a description of the equipment, machines, tools, and materials needed, an evaluation of lighting, ventilation, and noise conditions, the work layout, and methods used are some of the data which are essential to good time-study recording procedure.

After describing the above details for a study of the bolt and washer subassembly discussed in Case Section A, the time-study man would proceed to break the operation down into its elements. If micromotion analysis were to be made with a motion-picture camera and a high-speed clock, the following illustrative elements might reasonably be selected:

From: Subassemblies released by fingers

Element 1: *Transport empty, A*
To: / From: Hands touch leather washers

Element 2: *Position leather washers*
To: / From: Hands leave fixture holes

Element 3: *Transport empty, B*
To: / From: Hands touch plain washers

Element 4: *Position plain washers*
To: / From: Hands leave fixture holes

Element 5: *Transport empty, C*
To: / From: Hands touch bolts

Element 6: *Position bolts and lock washers*
To: / From: Hands lift completed subassemblies

Element 7: *Dispose*
To: Subassemblies released by fingers

(Repeat cycle; see Element 1 above)

The reader will readily grasp the fact that these particular elements require less than a second each for performance by a

[6] William R. Spriegel, *Industrial Management*, page 274. New York: John Wiley & Sons, 1947.

skilled operator. They are far too short in duration for timing by ordinary stop-watch time-study technique. For stop-watch time-study purposes, an element should be at least three seconds or more (.05 or more on a decimal timer). An observer cannot cope with shorter elements with reasonable accuracy. Thus, for stop-watch time-study purposes, we cannot break our bolt and washer subassembly job down into anything less than complete cycles. Nevertheless, it is important that we record the details of the proper method so that future time studies will concern themselves with the identical job when checking our results.

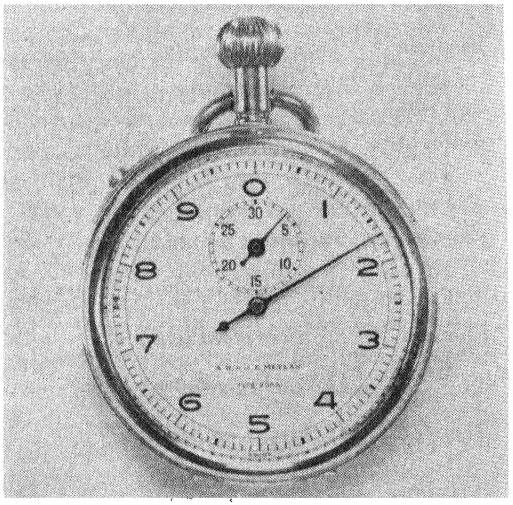


Figure 10–7: "Meylan" Decimal Timer for accurate time studies. (*Meylan Stopwatch Company*)

Recording element times. The equipment needed to put the average time-study man into business is simple and inexpensive. A good quality decimal stop watch (See Figure 10–7) may be purchased for approximately $20–30. The watch dial is divided into 100 divisions. A large sweep hand makes one revolution a minute, covering the 100 divisions in 300 separate movements. A smaller hand and dial on the face of the clock accumulate 30 revolutions of the larger hand, *i.e.*, 30 minutes. The watch may be turned on and off without resetting by moving a slide device located near the crown. Downward pressure on the stem resets both hands at zero. If the slide is in the "on" position, the hands immediately start to run again once the stem pressure is released. As is the case with ordinary watches, stop watches must be wound occasionally by turning the stem a few revolutions.

A time-study board with a spring clip to hold paper forms and a special form holder to accommodate the stop watch may be fashioned or purchased for a very few dollars. The record paper itself may be printed or mimeographed. (See Figure 10–8.)

After recording the method and developing a set of elements for timing purposes, the time-study man is ready to record observed element times. A good time-study man will explain his purposes and his methods to the supervisor and the operator involved. He will obtain their cooperation and their suggestions before proceeding with the recording phase of the study. During the timing process, the time-study man normally stands to the rear of the operator and slightly to one side. He lines up the operator, his stop watch, and his data sheet in the same general plane in his field of vision so that his eyes will not have to shift unduly during the course of the study. He records times for all movements that the operator makes, including both planned and unplanned movements. He makes special notes on his recording sheet, describing any unusual occurrence. Examples are an interruption of work by the supervisor or an inspector, a fumble on the part of the operator, an unnecessary step added by the operator, or personal time taken off by the operator. After he has completed his observations, consisting typically of 20 or 30 full cycles of work, he may go over his readings and notes at leisure. At this time, he will reduce recorded figures to values representative of the performance under study.

Two relatively simple methods of making stop-watch readings are in popular usage among time-study men. One method, which

TIMESTUDY FORM

Description of Job_____ Operator's Name_____

_____ Check Number_____

Dept._____ Supervisor_____ Observed By_____ Date_____

Ele-ment No.	Elements and Timing Points	Read-ing	1	2	3	4	5	6	7	8	9	10	Minutes Aver-age	Sel-ect		
From		Con-Tinu-ous														
1		Indi-vi-dual														
To		Cont														
2		Indv														
To		Cont														
3		Indv														
To		Cont														
4		Indv														
To		Cont														
5		Indv														
To		Cont														
6		Indv														
To		Cont														
7		Indv														
To		Cont														
8		Indv														

DETAILS:

Total Element Time_____

Total Element Time Adjusted For Worker Proficiency_____

Allowances in Minutes:

_____

_____

_____

Total Allowances_____

Standard Time-Minutes Per Piece_____

Standard Output-Pieces Per Hour_____

(Use space on other side of sheet for additional notes on observed action, methods, conditions, and sketches of job layout.)

Figure 10-8: Timestudy Form.

is easy to master, is called the snap-back method. The time-study man simultaneously reads his watch and clicks the stem to send the pointer flying back to zero at the end of each element. No mathematical computation is needed other than the mere reading of the dial. The second method is called the continuous-reading method. The time-study man reads his watch at the end of each element, but allows the hand to sweep around the dial for the duration of the time study. Each element's time is computed by subtracting the elapsed time for element 1 from the total elapsed time after element 2, the total elapsed time after element 2 from the total elapsed time after element 3, and so on. Although an additional mathematical chore is involved, the

continuous reading method has the advantage of accounting for every interval of time that elapses from start to end of the study. The sum of element times observed in snap-back readings may not add up to the total time actually elapsed during the study. The experienced time-study man expects that his errors in reading the watch will amount to no more than .01 minute for any given reading. This error could be significant percentage-wise for a short element of just .05 duration, but it would tend to be minimal for a longer element of .10 to .25 or more in duration.

The considerations involved in making an actual time study may readily be illustrated before a group by having one member trace a chalk line from one side of a blackboard to the other. Vertical lines marked on the blackboard might be labeled "start," end of element 1, end of element 2, and end of element 3 (the final element in the cycle). Members of the group will click their watches as the demonstrator's line-tracing hand crosses the "start" line. They will make a reading when his chalk line passes from element 1 to element 2, a second reading from element 2 to element 3, and a third reading at the end of element 3. Should the demonstrator hurry through one element and slack off pace in completing another element, the observer will jot down a note concerning this apparent change of pace, as well as record the actual times observed. Should the demonstrator grow arm-weary and deviate significantly from a straight-line path, the observer will make a special note concerning the reading obtained. Should the demonstrator stop to scratch his eyebrow or to haul out his handkerchief, these deviations from routine path merit a special notation. Should the chalk break in transit and fluster the demonstrator temporarily, this fumble also would be entered as a note on the observer's chart.

All of the unusual events recorded above require careful analysis, once the readings are completed. If an operator just happens to move more slowly in completing element 1 in cycle 15 than in completing element 1 in cycle 16, there is no apparent reason to throw either time reading out. Both readings will enter into a final arithmetical average. If an operator fumbles while performing a routine task or adds an unnecessary movement, the time obtained for the element involved should be deleted from the study. If some fumbling is inherent in the task because of occasional imperfections in the raw material or because of difficulty in handling unwieldy materials, the time consumed by fumbles should be retained in the study. Elements of this type occurring irregularly should be apportioned over an appropriate number of cycles.

Rating the operator. The time-study engineer does not conduct a long search to find the average man working at the average pace every time he makes a time study. Instead, he will compare the pace of the man being observed with a concept of normal or standard and evaluate the degree of deviation from standard of the operator being observed. For instance, one man might be judged on the basis of skill and effort rating to be working at a pace which is 130 per cent of standard. Another man might be rated at only 80 per cent of standard. The actual time-study readings that the observer writes on his sheets must be adjusted by whatever percentage figure is deemed appropriate, in order to convert observed readings to standard-pace readings for use in the dozen or more different applications of time-study standards listed at the start of this section.

What is "standard" and how is this concept of a standard pace to be determined objectively to serve as a yardstick against which to measure particular cases? This is a fair question. If it could not be answered in a fairly convincing manner, time-study techniques would soon be discredited in the eyes of the various interested parties.

In the past, a vague answer has often been given to the rating issue. The time-study man has said that his adjustment of an observed reading to standard is "based upon long experience." It is true that an experienced observer will have a scale of

values in mind. He will have a mental picture of "benchmark" jobs being performed at different paces. He can fit the movements of the job being observed into this mental pattern with reasonable consistency. His whole scale may be too high or too low, however, when compared with other time-study men's mental scales of values. A standard based upon long experience is not necessarily free from conscious or unconscious bias.

In recent years, the concept of standard has been rather widely accepted by both labor and management groups using time study. It is defined as a pace approximately three-fourths as fast as the maximum pace that the average person who has learned the job can sustain without harmful effects over a long period. This standard has been written into wage contracts as the equivalent of "walking at the rate of 3 miles an hour" or "dealing 52 playing cards into 4 piles in one-half of a minute." Motion pictures are widely available that show individuals on the road or at the table under standard conditions setting a standard pace. Other film sequences show individuals in step-by-step deviations from the standard pace, ranging from half of standard on the low side to twice standard on the high side. Even the casual observer can distinguish the 1½-mile walk from the 6-mile "walk." With some considerable practice, that observer can build a reasonably objective rating scale in his mind for application to other job situations.

Setting job allowances. The rating scale that the time-study engineer uses to adjust an observed job at an observed pace to standard must also take into account differences in degree of job difficulty. It is obvious, for instance, that a laborer lifting 94-pound sacks of cement cannot match, movement for movement, a laborer who has been assigned the equally useful task of stacking foam-rubber pillows. Many other job conditions must be taken into account besides mere weight of materials handled. Some operations must be carried out in 120-degree temperatures, whereas other operations can be performed in air-conditioned shops. Some operations require close eye and hand coordination, whereas other operations may be performed mechanically by nimble fingers alone. Some jobs are largely machine controlled and cannot readily be speeded up, whereas other jobs, which are hand controlled, can be performed in one half of standard time by increased worker effort. The trained time-study man will consider the need for allowances in particular jobs within each of the following categories:

1) personal time required by the operator (3 to 10% range), 2) portion of cycle that is machine controlled (33% allowance if entirely machine controlled, ranging down to 0% allowance if largely hand controlled), 3) hand-eye coordination (0% to 6% range), 4) handling requirements, *i.e.*, sturdy *vs.* fragile (0% to 5% range), 5) weight involved (0% to 35% range), 6) bimanualness, *i.e.*, hands help each other *vs.* hands work simultaneously on duplicate parts (0% to 10% range), 7) foot pedals (0% to 10% range), 8) amount of body used (0% to 8% range).[7]

Extreme care must be exercised by the time-study engineer not to invalidate a careful study, in which times are clocked accurately within .01 of a minute, by picking out of the air an arbitrary 20 or 40 per cent lump sum allowance. Consistency and objectivity in setting separate allowances for each of the factors listed above can go a long way toward making or breaking the entire time-study program of a given plant.

Administering a time-study program. We have indicated above that the manner in which the procedures and techniques are used by the time-study man can be a key determining factor in the success or failure of a time-study program. The attitude top management adopts toward the program is

[7] See Marvin E. Mundel, *op. cit.*, pages 155–168.

equally as important as the technical correctness of the procedures used. If management recognizes both the strengths and limitations of time study and utilizes it when appropriate, as just one of many tools that may aid in good administration, time study may be of very great value indeed. Consistent policies should be followed with regard to time study so that the entire organization will know the rules under which individuals are to operate. For instance, the definition of standard, *e.g.*, the 3-mile walk, should be known and accepted within the organization. The jurisdiction of motion- and time-study department men should be determined, and the relationship of these staff members to various line supervisors should be clarified. Reasonably uniform practices should be followed in the making of actual studies. The conditions under which methods and standard times will be reviewed and changed should be clearly set forth. Unless management will stand by a time standard, even if operators spurred by incentive wages are able consistently to beat the standard, the incentive generated by the system will soon die out and be replaced by cynicism.

It should be remembered that management stands to gain significantly through increased capacity and utilization of plant and equipment if operators work at the 4-mile instead of the 3-mile pace, even if labor costs per unit of output remain constant. If motion and time study are effectively applied and if the incentive wage system is accepted by labor and management in good faith, the new 4-mile pace, which is established, may compare with a former 2-mile pace rather than with a 3-mile pace.

Motion- and time-study techniques typically enable management to increase its own efficiency in providing labor with favorable conditions under which to work. Laborers, in turn, increase their pace and efficiency under the spur of incentive wages, which give recognition for increased output, and highly-motivated operators require less supervision than formerly to channel their energies along productive lines. Employees can increase their earnings by one-third upon the adoption of a motion- and time-study program, and management may ultimately witness a doubling in plant output. This increased productivity and efficiency can be reflected in both increased profits and wage rates.

5. *PLANNING & CONTROL*

We may be somewhat surprised to discover that we have already come a long way in the study of production planning and control through our reading of chapters 9 and 10. Blueprints, machine-tool operation sheets, alternate methods of cutting metal, plant layout, methods standardization and motion economy, worker instruction, and time study all are essential ingredients in the total process.

Production planning and control has been defined by Koepke as "the coordination of a series of functions according to a plan which will economically utilize the plant facilities and regulate the orderly movement of goods through their entire manufacturing cycle, from the procurement of all materials to the shipping of finished goods at a predetermined rate."[8] Specific systems naturally vary tremendously in accordance with differing theories and with different circumstances encountered in individual plants. In some form or another, however, systems for controlling production all contain common basic elements of planning, scheduling, routing, dispatching, expediting, and checking. We may grasp the nature of these ingredients most readily by considering them in a relatively simple production situation.

Home cooking illustration of production control elements. We shall visualize the process of production control by considering the familiar example of the lady of the household preparing a meal in the kitchen.

[8] Charles A. Koepke, *Plant Production Control*, page 26. New York: John Wiley & Sons, 1949.

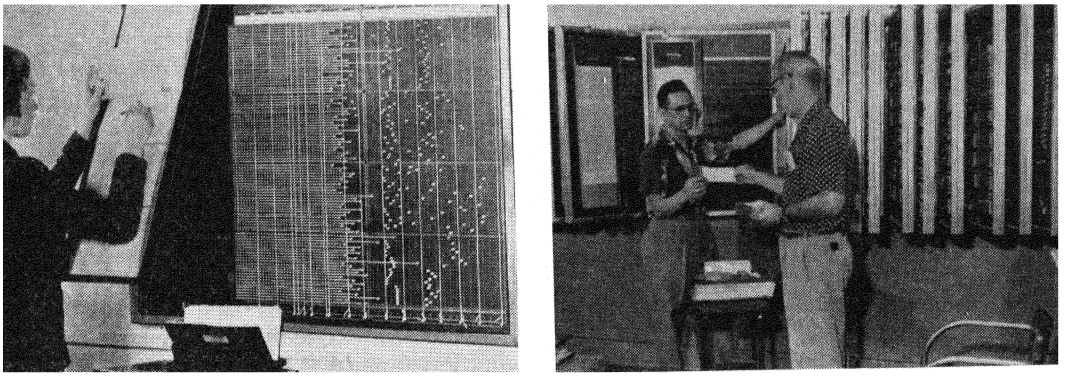


Figure 10–9: Wassell "Produc-trol" equipment facilitates operation of extensive yet centralized production control activities at the plant and at the departmental organization levels. At left are a visible index and a production control board. At right is the centralized production control room of the Coleman Company in Wichita, Kansas. (*Wassell Organization*)

1. The efficient housewife first plans the entire meal preparation process, consciously and in detail if it is the first time that she has produced a particular combination, or else informally and sketchily if it is the umpteenth time that she has gone through the procedure. Planning in the kitchen includes a) decisions as to procurement of ingredients in economical lot sizes—from store or garden, and decisions as to maintenance of an adequate stock on hand—in pantry and refrigerator. Inventory policy, for example, might call for 1) a year's supply of salt and pepper, 2) a month's supply of shortening, 3) a week's supply of eggs, and 4) a day's supply of milk. Initial planning would earlier have included b) decisions as to procurement of necessary plant, equipment, and tools (kitchen, stove, and spoon, respectively, serve as examples of each type). In planning, the housewife might also have c) decided to engage a new helper (daughter, preferably, or son) to augment the labor supply.

2. Having planned adequately for the "men, materials, and machines" needed in the food-preparing process, the housewife proceeds to schedule actual production of the evening's meal. She knows both from earlier training and experience and from reference to a handy cookbook that the various products of her cookery, which are to comprise the evening's meal, have varying preparation times. For instance, she must have the pot roast ready for cooking well ahead of the boiled potatoes, which in turn precede the green peas by a wide margin. The fresh-fruit salad is left in the refrigerator in the form of apples, bananas, grapefruit, oranges, and lettuce until the very last moment. The red gelatin square, which sets off the fruit, had required a simple "subassembly" mixing operation several hours previously. The manufacture of the entire dinner and of each of its component dishes calls for a definite program of food preparation, with due attention paid to sequence and timing of moves for maximum efficiency.

3. An important routing problem may also be involved in the preparation of a full-course dinner. It may happen that the family pressure cooker, which would be most useful for cooking the potatoes, has already been earmarked for the pot roast itself. An alternative routing must be utilized for one or the other of these ingredients, even though more time and gas are consumed in heating said dish in a regular cooking pan. It might also happen that the four gas burners would not be sufficient for peak cooking needs unless the coffee were prepared well ahead of time and simply re-

heated while the vegetables were being drained and seasoned. The routing of ingredients to specific pans and burners and the checking of necessary routing selections back against the preliminary schedule, for possible adjustments in plans, comprise essential steps in the efficient conduct of operations.

4. There is an important dispatching element in our home-cooking illustration. The materials to be worked upon must be taken from the pantry and the refrigerator at a time that is in keeping with the schedule planned earlier. The cutting, measuring, mixing, stirring, and heating steps in the process must also be performed at the proper time and place and in the prescribed manner.

5. If an inexperienced helper is trusted with major responsibilities in connection with the meal, such as setting the dining-room table, the immediate follow-up or expediting element takes on added importance. Failure to keep up the scheduled pace at any point along the line will result in troublesome bottlenecks. If key operations are thrown off schedule or, worse still, omitted entirely, the whole cooking operation may fall short of achieving its commendable objective.

6. In addition to the short-range expediting function, a good food-production control system will have a longer-range follow-up function. We may label this element "checking." It involves a) checking upon the operation of the production control system itself, b) analyzing problems encountered under the system, and c) correcting deficiencies brought out in the analysis. The housewife might conclude that her helper could adhere to schedule more satisfactorily upon receiving special training during off-hours. Similarly, analysis of the shortcomings of a particular production control system might indicate a need for follow-up training of persons who must be relied upon to operate key stations comprising the production control system.

Systems vary with needs. The essential elements of production planning and control are contained in the outlined home-cooking illustration. Actual production-control procedures may vary widely in practice, however, depending upon the case situation. The production-control system used by a Jamesville, N. Y., rock quarry would obviously differ tremendously from the system governing TV-receiver lines at nearby Electronics Park. Few of the specific procedures used in the receiver building could be applied in G.E.'s general machine shop. (See chapters 6 and 7.) Once the receiver-building production lines have been set up for production of a particular model, the major decisions pertaining to routing are thereby automatically resolved for the duration of that model.

The routing of operations from machine to machine within a job-machine shop is a matter of prime importance calling for close day-to-day control. It is not just a matter of determining which machine is *the* best one for the job from a technical engineering point of view. The question at issue more typically is that of determining which of several types of machines that *could* do the job satisfactorily *should* be assigned the job, so as to keep the over-all machine load within the shop more or less in balance. It frequently happens that the machine that could do the job most efficiently in the absolute has several weeks or months more of work lined up ahead of it than other satisfactory but less efficient machines. In such event, it is often more economical from an over-all point of view to use an alternative routing that keeps additional men and machines busy, rather than to back up work for long periods awaiting the clearance of bottleneck machines. The production-control supervisor must be well informed concerning the economies of shop production so that he can base his decisions on pertinent grounds.

Scheduling and routing problems within the mass-production receiver building, which is laid out on a line-assembly basis, may be illustrated by inserting colored marbles in a battery of long glass tubes. Red,

blue, yellow, green, and white marbles roll out of the far end of each tube in just the order in which they are inserted at the near end. The speed with which each marble rolls is related to the slope of the particular tube involved. If it were desired to bring all of the subassemblies (red marbles) involved in manufacture of a combination AM-FM radio-TV console model with triple-play record attachment together for assembly along one branch of the final assembly line, the conveyors must deliver to their assigned stations at the assigned time the dozens of subassemblies of a particular type that enter into this model of the product. Interspaced with these "red marble" subassemblies along the main conveyor line are "blue marble" subassemblies for 16-inch table models, and "yellow marble" subassemblies for 24-inch console models. When cabinet styles, cabinet colors, and other optional features are taken into account, the number of different "marble" types required in the assembly process becomes very great indeed. The precision timing called for in intricate radio-TV or automobile assembly work does not "just happen." It is the result of carefully planned and meticulously executed programs for production control.

No matter how sound they may be in theory, the production techniques described in chapters 9 and 10 are limited in actual performance by the capacities of the men who perform them. If the men who are working the machines are not capable of performing their assigned tasks, detailed knowledge of what the tasks themselves should be will avail nothing. If the supervisors who lead the plant personnel have not been selected wisely or trained adequately for their positions of responsibility, the efforts of labor and management will produce, not product, but friction and discord. It is fashionable today to assert that human relations are "the thing" in business. This statement is none the less true because it now bids fair to become trite. Yet if more than lip service is to be paid to human relations in industry, the organization in which human relations are to be made sound must, itself, be constructed of sound human materials. It must have a solid core of capable personnel, both supervisory and operational. It is, therefore, singularly appropriate that we focus our attention upon problems of personnel and industrial relations in the next chapter.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	168–169	In what sense may the objectives of plant layout be characterized as conflicting? Illustrate by comparing several different ones.
2	169–170	Name two or more additional examples of the following types of manufacturing industries: (1a) continuous-process and (1b) assembly; (2a) "analytical" and (2b) "synthetic" continuous-process (3a) "similar and like" and (3b) "dissimilar and unlike" assembly-process.
3	170–172	Why is it that job-lot manufacture, organized on a "functional" or "process" basis, is almost invariably used for products calling primarily for nonrepetitive operations?
4	170–172	Under what conditions might a straight-line flow of production be preferable to a lateral flow in a modified line layout?
5	170–172	What advantages may be claimed for functional or process layout under favorable circumstances; what disadvantages may be noted under adverse circumstances?

QUESTION NO.	PAGE REFERENCE	QUESTION
6	172–175	Why is it desirable that the "case method" of procedure be used in developing a new plant layout? Why cannot layouts that have proven successful at various other plants simply be adopted lock-stock-and-barrel?
7	173–175	What role may the plant-layout staff play in the endeavor to ensure profitable operations within the receiver building at Electronics Park from year to year?
8	175–182	In what respects are a) method standardization and motion economy, b) employee training, and c) time study "closely interrelated"?
9	175–177	Would you expect a methods engineer to be able to secure significant savings by improving existing production-line methods in a typical plant without himself acquiring at least the skill of a normal worker on key operations? Support your views.
10	175–182	What factors would tend to preclude greatly multiplied use of micro-motion studies in American industry today?
11	175–177	In your opinion, are the "principles of motion economy" mere truisms, or do they represent the end-product of a program of careful scientific investigation? Support your views by reference to several specific principles.
12	Case Section A & 181–182	Study the bolt and washer subassembly problem discussed in Case A, and complete items a. and/or b. below: a. (Optional: Construct a suitable fixture using fiber board or plywood. Obtain a dozen bolts, lock washers, plain washers, and leather washers from a hardware store. Demonstrate 1) the hand assembly method, 2) the first series of improvements resulting from use of the fixture, and 3) the final improvement in method.) b. List the steps involved in methods 1), 2), and 3) in parallel columns. Analyze the probable sources of saving in time per piece.
13	177–179	What methods of teaching are characteristically used in your class in connection with this *Elements of Business Administration* text and course? In what respects do the methods used in chapters 9 and 10 differ from those used earlier in chapters 5 and 8?
14	177–181 & Case Section A	Draw up a lesson plan for use in instructing other members of the class who wish to learn the improved method of performing the bolt and washer subassembly described in Case Section A and referred to in question 12.
15	177–181 & Case Section A	Approximately how many hours of practice would you personally require in order to progress through the various phases of a learning curve relating to the learning of the improved bolt and washer subassembly task described in the text and referred to in questions 12 and 14?
16	179–180	May time studies be employed usefully in situations in which incentive wage payments are not feasible? Explain.
17	179–182	Would not an actual record of time required for a job over the past several years be more useful in determining standard time than a few dozen readings recorded by a time-study engineer?
18	181–184	In making a time study, would it not be more accurate simply to record the total time required to complete a full cycle without attempting to break each operation down into relatively brief elements? What role do element times play in the setting of standard time per piece?

QUESTION NO.	PAGE REFERENCE	QUESTION
19	181–184	In checking a time study completed several years earlier, need a time-study engineer bother to compare equipment, layout, and method used once he has determined that the product being turned out currently is identical with that of the earlier period?
20	184	While one member of the group traces chalk lines between vertical start and stop lines, record continuous time readings for each element crossing, using a stop watch or the second hand of a wrist watch or pocket watch. Compare elapsed time for each element and for the total demonstration with your colleagues.
21	184–185	Should the plant time-study engineer be instructed to seek out the average man working at an average pace for each study, rather than to make corrections to observed readings in an effort to equate the pace of the operator being observed with a concept of normal or standard? Discuss.
22	184–186	In your opinion, would the concept of "normal" or "standard" performance, which is held by an R.C.A. engineer, differ significantly from that held by a G.E. engineer? A U.S. Steel engineer? An I.U.E. engineer consultant?
23	185–186	If an operation is entirely machine-controlled and the operator is given an allowance of 33% over machine-determined time, does this incentive system providing for 133% of base pay differ in any significant way from a straight day wage rate equal to the 133% figure?
24	185–186	If direct labor payments per unit of output are not to be altered under terms of a union-management contract agreement, why might the management of the Rock-Slide Manufacturing Co. still have been genuinely pleased to obtain a 100% increase in labor productivity upon installation of its new incentive system?
25	186–188	How might production planning and control for a college dining hall differ from the system used in your own home? Compare and contrast the two systems point by point for each basic element involved.
26	186–189	Would you expect problems of production planning and control to be more complex within G.E.'s Electronics Park than within an equally extensive steel mill whose specialty was the production of millions upon millions of assorted nails daily? Compare and contrast the two situations point by point for each basic element involved.
27	186–189	What net gains to management may be anticipated through installation and operation of a carefully-planned system of production control?

11 Personnel and Industrial Relations



TO AVOID LOSING OUR BEARINGS too quickly in a forest of personnel events and techniques, we shall approach personnel and industrial relations, in the first instance, by reviewing some findings of a well-known series of experimental studies in the vital area of human relations. These experiments were conducted at the Hawthorne plant of the Western Electric Company in Chicago from 1927 to 1939. The personnel movement itself dates back to World War I, in one phase, and back to the turn of the century and beyond, in another phase, as we shall note later in this chapter.

The systematic study of human relations in industry has infused the personnel movement with new vitality during recent years. The Hawthorne studies were reported by Harvard Graduate School of Business Administration professors during the 1930's in a series of papers, monographs, and books culminating in Roethlisberger and Dickson's widely read *Management and the Worker.*[1] These studies helped to lay the groundwork for the "human-relations" phase of the personnel movement, which is becoming increasingly dominant in this second half of the century.[2]

In 1927, the Western Electric Company and a group of Harvard professors began an inquiry into the human effect of work and working conditions. This study yielded insights into certain facts of human association in work and into certain techniques of human investigation, which were both novel and unexpected. At the outset, the investigators were interested primarily in the relation between conditions of work and the incidence of fatigue and monotony among employees.[3] They studied the total situation of five girls assembling telephone relays in a specially constructed relay-assembly test room. In the process of testing the effects of changes in light, in rest pauses, in working hours, and working equipment, the experimenters found that far more significant changes were manifested in the social interrelations among the

Photograph at top of page: Friendly job relations are keystones of industrial policy at the Western Electric Company's Hawthorne Works in Chicago, and the company conducts a comprehensive program dedicated to this end. (*Western Electric Company*)

[1] See F. J. Roethlisberger and William J. Dickson, *Management and the Worker.* Cambridge, Massachusetts: Harvard University Press, 1942.

[2] See "The Study for the Ford Foundation on Program and Policy." *Report of Business Division*, pages 14–119. San Francisco. 1949.

[3] Roethlisberger and Dickson, *op. cit.*, page 4.

operators themselves and in the relation between the operators and their supervisors than in the physical factors that the experiment was originally designed to measure. The experimenters were forced to take these changes in human relations into account when it became necessary to seek new hypotheses to explain a number of unexpected results of the inquiry.

As the small group of girls in the experimental room gained a sense of freedom from rigid and excessive supervision and as group solidarity displayed itself both at the verbal and at the work level, increases in productivity were forthcoming from highly-trained operators, even when adverse changes were made in routine work conditions. The nature of these results would not have surprised a psychologist or a sociologist working under clinical conditions, even in the 1920's. The degree of dominance exhibited by these evolving human factors over adverse physical factors in the work situation was a distinct surprise to industrial-relations researchers of that period, however, and led to increased appreciation of the importance of human relations in industry.

In the initial Hawthorne experiments, many of the practices common to the ordinary shop situation were unconsciously altered by the experimenters in their efforts to achieve a "controlled experiment" for the study of fatigue alone. The cooperation of the operators was cultivated to an unusual extent. The girls were advised of and consulted about changes to be made. Their reactions to varying conditions of work were sought in detail. The normal pressure for high output was relaxed. The girls were permitted to talk freely while at work. Their physical health and mental well-being were matters of real concern. Their psychological reactions to events were sought, and their anxieties, fears, and opinions were carefully taken into account.

Under these favorable conditions the relationship between operators and supervisors became close and friendly. The supervisor was conversant with the total situation, including the home environment and social problems faced by each individual operator. These new relationships in the work situation opened up to management a new concept of the relation between employee attitudes and industrial output. At this point, a rather narrowly-conceived study of fatigue and monotony was converted into a broad study of possibilities for the improvement of employee relations generally.[4]

In the second phase of their project, the Hawthorne experimenters shifted from an intensive "observation" study of five operators to an extensive "interview" study of the likes and dislikes of 20,000 Western Electric employees.[5] The results of employee interviews were made available to units of the company responsible for plant conditions and were given also to supervisory training groups for use in conference discussions. The reaction of both employees and supervisors to the idea of conducting an interview program was highly favorable.

Although morale was raised by the fact of holding interviews, the interviews themselves were not very productive until the interview technique was changed from a direct questionnaire approach to an indirect, spontaneous-talking approach, in which individual interviews averaged one and one-half hours in duration and resulted in 10-page typed reports. Once the interview technique shifted in emphasis from extensiveness of coverage to depth of penetration, startling new insights were obtained into the social organization of employees in the plant situation.

The company was seen to be more than an organization for the efficient manufacture of telephones. It was also a human organization in which the needs, the desires, and the sentiments of human beings were trying to find adequate expression. A

[4] *Ibid.*, pages 19–186.
[5] *Ibid.*, pages 189–376.

system of sentiments provided a framework within which the employee's thought was set. Persons and groups were differentiated from one another through this system, on the one hand, and were integrated through its functioning, on the other hand. Individual employees received status within the organization, because of such things as rank, length of service, sex, and office or shop position.

Much of the employee's working environment actually reflected these distinctions. For instance, office workers received a day wage, whereas shop workers were on an hourly, incentive basis. Supervisors were differentiated from workers by special privileges and duties, and various ranks of supervisors from other ranks in degree of participation in management decisions.

On the other hand, this system of sentiments served to integrate certain groups within the structure as well. Both the president and the janitor took pride in length of service to the company. Both the shop foreman and the apprentice helper had a common bond in being shop workers rather than office workers. These various distinctions had different value for different individuals and for different job levels, of course, but they were none the less a vital part of the social organization of the company.

This awareness of the company as a human organization led the investigators to develop a broad conceptual scheme for understanding factors determining satisfaction or dissatisfaction at work. Statements by employees could not be adequately interpreted simply by referring them to the employees' physical environment. People working in identical surroundings do not react psychologically in the same way to these surroundings. Moreover, the personal situations of the employees interviewed, including their home life and their previous social conditioning, were fully as important in interpreting statements as the factual conditions known to exist physically. The position or status of an individual within the social organization of the company colored his outlook to an important degree. The meaning the individual assigns to his position within the social organization depends also upon whether or not it permits him to fulfill the particular social demands that he is making of his work.

The results of the interview studies, engaged in by the investigators during stage two of the Hawthorne experiments, pointed again toward the value of more intensive studies of small groups at work, under conditions in which the prevailing social situation could be adequately understood.

The investigation entered stage three with much more adequate operational techniques and working hypotheses than were available for application during stage one in the relay-assembly test room. In stage three, 14 male operators in the bank-wiring observation room were studied closely for six months. This study applied the conceptual scheme of social organization, which evolved during stages one and two, resulting in a detailed study of a shop situation from a sociological point of view. It gave a picture of the spontaneous, informal social organization that functions within the formal framework of the company's structure.

In this study, a distinction between the overt behavior or actions of individuals and the verbal behavior or words employed by these same individuals was seen to be a matter of real concern. The research team, consisting of an "inside" observer and an "outside" interviewer working in complementary fashion, soon found that the difference between saying and doing was considerable. For instance, lower-level working supervisors often gave orders verbally without backing them up in the broader sense by exemplifying these orders in their own conduct. Under these circumstances, the workers behaved properly when top supervisors were on the scene, but shifted back to a different behavior pattern when only their immediate supervisors were present.

Company rules and regulations regarding conduct were, on the whole, disregarded by the social group. Moreover, even in the vital matter of wage incentives and other

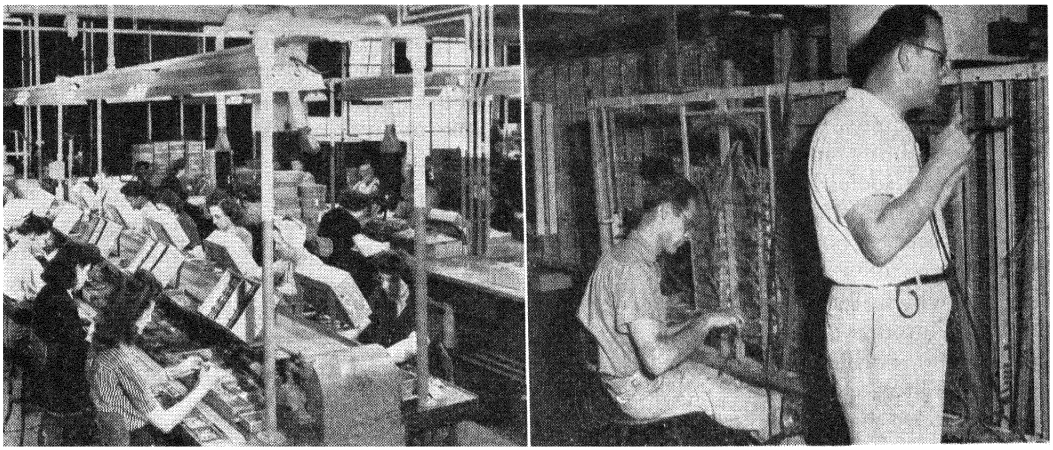


Figure 11–2: Nimble fingers and a spirit of cooperation are essential for efficient assembly of small electrical units on a typical telephone relay assembly line at the Hawthorne Works (left). Thousands of wires and tiny terminals must be joined by soldering as one step in the manufacture of automatic dial switching equipment at the Western Electric Company's Hawthorne Works in Chicago (right). (*Western Electric Company*)

inducements, the employees did not act as company policy assumed that they would act. Instead of turning out more production for more pay on a straight-line incentive basis, the employees restricted their output in accordance with an informal concept of a "fair" day's work. They preferred, as a group, to take home less pay than they might have earned, rather than risk a change in the basic pay rate by reason of "excessive" earnings.

The social group within the shop was not homogeneous, even though members tended to act collectively with respect to outsiders and outside events. Detailed observation and interviewing brought out the fact that the 14 men, each of whom specialized in one of three basic jobs, were organized into two cliques, which actually tended to cut across occupational lines. The more active clique consisted of group members who sought to restrict group output by bringing pressure, in the form of ostracism and ridicule, upon operators who transgressed group codes. Other group members were forced into a second clique largely by their exclusion from the first clique.

The group as a whole banded together to protect members from outside interference, however, by bringing into line those supervisors and inspectors who might otherwise interfere with their affairs. Nearly all of the activities of the informal social organization within the company could be interpreted as efforts to control the behavior of company members in accordance with the collective beliefs and sentiments of the general work group.

The Hawthorne experiments had important implications both for industrial organization in general and for personnel relations in particular.[6] An industrial organization was seen to be a social, as well as an economic, organization. The production of goods and services is readily understood to be the economic function of the firm. The existence of the social function is commonly recognized, but its actual content is less well known.

In the process of creating products, an industrial organization also creates and distributes satisfactions among individuals participating in the organization. The well-known personnel-relations problems in-

[6] *Ibid.*, pages 551–604.

volved in recruiting manpower, selecting and placing employees, training employees, setting wages and working conditions, providing employee services, preventing accidents and illness, stabilizing employment, and maintaining morale pertain fully as much to the social functioning of a firm as to its economic functioning. These personnel problems are concerned chiefly with the maintenance of a type of social organization in which individual employees and employee groups can satisfy their own desires, while working together in the interests of the firm.

Even more basic than specific morale-building activities that the personnel-relations department might launch is the need for the personnel-relations staff to build, within the supervisory organization, an awareness of the importance of problems of human relations in industry and an awareness of techniques through which these problems can be solved. In addition to keeping external problems in balance, as, for instance, by meeting competition or adjusting to market changes, a firm must maintain an internal equilibrium, as, for instance, by developing a social environment in which employees can work together effectively with satisfaction to themselves.

The technical organization of a plant involves such items as the physical plant, machines, materials, and products. The human organization of a plant involves such items as individuals, groups, cliques, social needs, sentiments, and goals. Patterns of relations and objects symbolizing these relations constitute the social organization of a firm. Behavior patterns exhibited by individuals and by groups in the factory situation must be related to the social organization of the plant, as well as to the psychological "conditioning" of these individuals in order to be understood.

Every item in the industrial environment is related to the prevailing system of sentiments in the plant and, thereby, becomes a carrier of social value. For instance, the size of the desk that is assigned to a particular supervisor, his access to a telephone, his possession of a key to a separate washroom: all of these items become symbols of status and prestige within an organization and acquire specific social significance. Noneconomic motives and sentiments are fully as important in business behavior as are the logical conclusions of an assumed "economic man." For this reason, the effects of changes in methods of work, in conditions of work, and in methods of payment for work cannot be predicted in simple fashion. Instead, the effects of these changes must be considered in terms of the specific social situation in which they occur.

The Hawthorne experiments pointed out to the investigators the need for action on three general human problems of major significance to management. These problems, which are interrelated and subsumed under the general problem of maintaining equilibrium in the internal organization of the plant, are as follows:

1. Problems of change in the social structure.
2. Problems of control and communication.
3. Problems in the adjustment of the individual to the structure.

In visualizing the first problem, it is well to regard an industrial organization as a relatively stable social structure through which individuals are moving in time and place. Changes in any part of this structure are likely to have consequences in terms of the existing equilibrium among groups within the firm, as well as within each group. Two important classes of typical changes are those in technical and in formal organization. The introduction of new machinery or methods constitutes a technical change. The merger of two separate departments within the plant constitutes a change in formal organization. It should be remembered that changes in technical and formal organization directly affect the social organization of the firm. They may have wide ramifications with respect to the effective functioning of the organization and to personnel relations.

In order to control operations in an in-

telligent manner, management must continually receive accurate information as to the manner in which the company organization is actually functioning up and down the line. This problem of communication of information, in intelligible form, involves a movement down through successive levels of supervision, on the one hand, and a flow of information back up the ladder from the work level to the very top, on the other hand.

In many firms, management issues orders concerning a situation without taking into account the sentiments of the groups at the operating level. Management then remains ignorant of problems raised by these orders because of failure of the supervisory structure to communicate facts concerning this situation back to the policy-setting levels of management. Faulty communication or blocked channels of communication may precipitate crisis situations under circumstances in which the basic difficulties might readily have been avoided through better understanding upon the part of all parties concerned.

As the individual employee moves through time and space within the social organization, there constantly arises the need for adjustment of the individual to the total structure. In some instances, the individual himself is one who progresses upward at a rapid pace. In other instances, the social structure itself may change in time, while the individual stands still. In either event, a change will have taken place in the position of the individual with respect to the social structure. The personnel-relations director of a firm must be particularly alert to the need for a continual process of orientation of individuals within the industrial structure. Moreover, it should be remembered that each individual tends to evaluate himself in relation to his situation and is, in turn, evaluated by others in terms of their own criteria.

The personnel-relations director must see to it that these varying criteria are sufficiently positive in content to permit the successful functioning of the firm upon a foundation of willing cooperation and mutual respect. The important personnel-relations functions of hiring new workers, upgrading and downgrading existing employees, and of shifting personnel from post to post within the organization are key determinants of the degree of success that may be enjoyed by management in maintaining equilibrium within a firm for high productivity.

Personnel-relations specialists should school themselves to think on a specific case or problem basis—that is, to focus upon the special situation faced by a particular employee with a given personal history and a specific work environment—when dealing with concrete human situations. There is a time and a place, in personnel work as elsewhere, when it is appropriate to reduce individuals to a "dead average" and to talk about problems in general. Statistical abstractions may, of course, be of vital importance. When used appropriately they may aid objective thinking and facilitate wise policy decision-making.

When complex human situations are involved, however, the trained personnel-relations administrator will reason toward the concrete and shy away from convenient abstractions. The conceptual scheme of regarding a firm as a social system, the method of interviewing individuals, and observation of situations will enable the personnel man to tackle human-relations problems systematically and explicitly, as the occasion warrants. One of the great gains of the Hawthorne experiments, in this respect, was the light they shed upon the potential role of personnel counselors, dealing on a confidential basis with both employees and supervisors. Under conditions in which the basis for a relationship of mutual trust and confidence actually exists between labor and management, an enlightened personnel-relations staff, operating on a continuing basis, can do a great deal to "keep things that way."

LABOR-MANAGEMENT RELATIONS

Labor-management relations are of course much older than the human-relations phase of the personnel movement. In fact, labor-management relations in industry antedate by many decades the personnel movement itself. Three major parties at interest have long been active in dealing with problems of labor and management in industry. It might be appropriate to identify these parties and to characterize their interests briefly at this time.

a. The labor movement.[7] The first organization of workers in the United States to maintain a continuous existence was formed by Philadelphia shoemakers in 1792. This organization lasted less than a year before collapsing under employer pressure. Other American labor unions sprang up during the early years of the 19th century to carry on strikes for wage increases. These union activities soon led to the formation of employers' associations that sought to procure non-union labor to break strikes. These employer groups frequently utilized the courts to great advantage in their fight to outlaw workers' organizations. Legal obstacles and the small-scale, dispersed nature of manufacturing prior to the Civil War prevented any significant expansion of labor organizations during the first half of the 19th century. Several dozen national unions of skilled craftsmen, such as the typographers, the stone-cutters, and the hat-finishers, had their origin, however, during this era.

The great Civil War stimulated an unprecedented expansion in industrial activity and, at the same time, forced a relaxation of employer opposition to employee organization during the period in which production was urgently needed. Single-trade labor unions thrived during this period. A new type of intertrade labor organization also came into being in several industrial areas. In 1869, a number of trade and intertrade unions amalgamated their interests by forming a powerful national organization, known as the Knights of Labor. This movement proposed to include not only the members of existing craft unions, but all other groups of skilled and unskilled laborers as well. A central administrative body was set up to foster the development of this powerful new organization. The Knights of Labor movement grew spectacularly until 1886 when it counted over 700,000 members within its ranks. A series of unsuccessful strikes called by the Knights' leaders pointed up conflicts of interests within its ranks and led to the rapid decline of this broad organization.

The break-up of the Knights of Labor movement left a clear field for the growth of a very different type of national labor organization. The American Federation of Labor, which was organized in 1886, is a voluntary federation of sovereign national and international craft unions. The member unions are the real source of strength under this arrangement, and the Federation itself has only such powers as are specifically delegated to it by the member unions. Membership in this organization grew spectacularly at the turn of the century, during the course of World War I, and during the decade of World War II.

The growth trend of organized labor was sharply reversed during the recession of 1921–22 and the depression of 1930 33. During bad times, many workers who were thrown out of work saw no point in remaining members of seemingly impotent organizations. Weakened unions, the tremendous increase in the number of workers competing for jobs, and the great decline in wage incomes and wage rates during these periods resulted in the widespread termination of trade agreements.

The attitude and policies of the Franklin D. Roosevelt administration toward unions, employer practices, industrial disputes, and wages and hours created a favorable environment for a tremendous growth in union membership and militancy during the

[7] See E. Stein and J. Davis (editors), *Labor Problems in America.* New York: Rinehart and Company, 1940.

decade of the 1930's. A number of mass-production industries were organized during this period. Disagreements within the A.F. of L. as to the wisdom of extending membership to industrial unions, as well as craft unions, led to the formation of a rival organization, the C.I.O. (now Congress of Industrial Organizations), in 1935. The militant C.I.O. developed new techniques for industrial warfare, including the sitdown and the slowdown strikes, during its successful organizing campaigns in the late 1930's.

The great growth in numbers of the American labor force during World War II brought new strength to the A.F. of L., the C.I.O., the railroad brotherhoods, and other labor organizations from coast to coast. At the midcentury mark, nearly a third of the American working population held membership in labor unions.[8]

b. Employer attitudes toward labor. In appraising employers' attitudes toward labor, one must constantly keep in mind the role of profit in modern economic society. To be successful, management must keep costs below income. Labor is not merely an important cost that management desires to keep as low as possible on a unit basis, it is also an avoidable cost—a direct or variable cost—as workers, in the main, are paid only for work performed and time spent. When work ceases to be available, management's direct responsibility for the payment of wages ceases, insofar as most workers are concerned.

However well disposed an individual employer may be toward his employees, his principal decisions concerning labor must be guided in large measure by considerations of profit and loss for his individual firm. Dogged determination to continue production at an out-of-pocket loss may result in bankruptcy, rather than temporary retrenchment. Not only is the individual employer's discretion limited by the conditions peculiar to his own business, but it is also seriously affected by the behavior of his competitors. In the main, the employer's attitudes toward labor are colored materially by the conflict of economic interests prevailing in the short run.

On the other hand, labor and capital are necessary to each other for long-run survival. Management's policies are often guided by the realization that workers are essential to profits fully as much as are stockholders. Moreover, there is no necessary correspondence between high labor cost and high wages paid, for labor costs are determined by the ratio of wages to productivity, rather than by take-home pay in the absolute.

If one were to compare the labor policies of a typical large corporation since 1920 with those of employers a half century earlier, a significant change in approach would stand out. Employers of the earlier period tended to believe that a policy of driving men would get the best results. The constant threat of dismissal was the principal sanction of the employer during that era. In sharp contrast during recent decades, most large enterprises have adopted new tactics in dealing with their working force. These firms have established personnel-relations departments manned by staff specialists. They have developed financial incentive systems, using piece-rate wage systems and bonus plans as substitutes for supervisory policing. They have developed service programs of a cultural and recreational nature for the enjoyment of their workers.

In the formulation of these modern policies, several influences have been operative. A growing number of industrialists have developed a philosophy which holds that a large enterprise carries with it a positive social obligation to the workers and to the community. Even more cogent as an activating force has been the growing realization that these policies pay for themselves

[8] See tables in Dale Yoder, *Personnel Management and Industrial Relations*, pages 660-669, New York: Prentice-Hall, 1948.

many times over if properly executed. The development of cost accounting as a control measure opened management's eyes to the advantages to be derived from stimulating the worker to greater effort. The spread of principles laid down by leaders of the scientific-management movement helped to create a new type of business manager.

Scientific management is a term referring to an attitude toward industrial management and labor relations that had its beginnings with Frederick W. Taylor during the 1880's. To Taylor's engineering mind, restriction of output was untenable. He felt that the abolition of restriction of output was a fundamental prerequisite to improved industrial conditions. He condemned the employer for lack of planning and for inefficient methods, just as he condemned the worker for restricting output. He believed that industry could evolve and apply certain rules of conduct that were as definitely ascertainable as the laws of natural science. Three principal features characterized Taylor's system of scientific management, namely:

1. Interesting the worker in maximum efficiency by hiring able workmen and by paying them higher wages than they could command elsewhere.
2. Improving work methods by standardization, by motion economy, and by worker instruction.
3. Operating according to predetermined plan.

Scientific management has exerted a far-reaching influence upon American enterprise in terms of methods of production, distribution, and office management. Traditional day-wage methods of labor payment have been replaced by incentive wage systems in a wide range of fields in which differences in output are readily measurable. The theories of scientific management were seriously deficient, however, with respect to the employer's labor policies. With the growth of a tight labor market during World War I, increasing numbers of employers turned to a new movement, known as personnel management, for a solution to their labor problems.

It is a fair generalization to say that scientific management sought to reduce the worker as nearly as possible to the status of a robot with automatic movements and predictable reactions. Personnel management, on the other hand, made the worker, rather than the machine he operates, the center of activity. The worker is regarded under this concept as an individual human being with human qualities and personal aspirations. Personnel specialists recognized that the worker's mental processes were of basic importance in industry. They sought to enlist the worker's mind on the side of productivity and cooperation in the work situation.

These personnel managers did not accept the prevalent theory that "paternalism" was a remedy for the great "impersonality" of modern industry. They insisted that, on the contrary, what was needed was a system of management that would plan, direct, and control activities with a minimum of friction, with a spirit of cooperation, and with a high regard for the basic interests of all members of the organization.

In the three or four decades of its existence as an active force, the personnel movement has built up an impressive record of achievement. New concepts of the relations of labor and management in industry have been evolved. New techniques have been developed to accomplish the tasks personnel managers have taken upon themselves in behalf of both labor and management.

With the advent of World War II, management's appreciation of both the need for and the potentialities of personnel administration activities increased significantly. Relatively great numbers of personnel-staff specialists in the field today were trained in an atmosphere of war production. The personnel movement is still in a relatively early stage of development, however, with respect to industry as a whole.

In analyzing personnel activities in American industry, one is struck by the extreme

variations to be found in different plants and in different industries. In some cases, management seems to have been thoroughly "sold" on the personnel idea and to have introduced comprehensive plans and programs. In other instances, the few activities of a personnel nature revolve largely around the selection and placement of workers. In still other instances, there are hardly any personnel functions at all. In explanation, it must be said that 1) there are substantial differences in the philosophies of different industrial leaders, 2) personnel work is expensive, and the amount of money a corporation can invest in it depends in part upon the company's short-range financial position, and 3) personnel work must be "made to order," not "ready to wear"; that is, if the program is to have any real vitality, it must be constructed around specific groups of workers and their problems.

c. Government in labor relations. Between the middle of the 18th century and the opening of the 20th century, governments throughout the world steadily increased the number of points at which they touched the individual. The industrial revolution, with its great increase in trade and its concentration of population in cities, created numerous problems that could not be resolved through the unaided efforts of individuals. As the people began to exercise a right to vote, they turned increasingly to the government as the logical agency to cope with these problems. In keeping with this world-wide trend, the United States government has, during the 20th century, regulated many phases of labor activity, formerly completely unregulated.

For the first hundred years of national existence, little was done by the Federal government in the labor field.[9] In 1884, after years of agitation by labor groups, Congress created a Bureau of Labor within the Department of the Interior with the duties of 1) collecting data concerning wages and hours, and 2) compiling information as to the means of promoting workers' "material, social, intellectual, and moral prosperity." Upon the request of President Theodore Roosevelt, Congress in 1903 created a Department of Commerce and Labor. The Bureau of Labor was transferred to this new department.

Continued labor pressure led Congress, in 1913, to establish a separate Department of Labor with cabinet rank. Its purpose was to "foster, promote, and develop the welfare of the wage earners, to improve their working conditions, and to advance their opportunities for profitable employment." The Bureau of Labor Statistics, the Children's Bureau, the Bureau of Immigration, and the Bureau of Naturalization were set up within this new department. The Secretary of Labor was directed to endeavor to mediate labor disputes, a power which led, in 1915, to the establishment of the Conciliation Service.

As an outgrowth of labor problems associated with World War I, the United States Employment Service emerged as a cooperative organization, partly financed by state funds. The Women's Bureau was created during this period to study the special economic and social problems faced by women. A separate Railroad Labor Board was set up at this time to aid in the settlement of railway labor disputes.

In 1932, President Franklin D. Roosevelt and a majority of both houses of Congress were elected on a platform that pledged the enactment of legislation regulating wages and hours and establishing unemployment insurance and old-age pensions. Thus, public opinion was seen to favor legislation long desired by labor. The New Deal Congress inaugurated a comprehensive program of positive assistance to workers. Legislation guaranteeing to labor the right to engage in concerted action was enacted in 1935. The first Federal legislation concern-

[9] See H. W. Metz, *Labor Policy of the Federal Government.* Washington, D. C.; The Brookings Institution, 1945.

ing social security came during that year as well. In 1938, legislation was enacted prohibiting child labor and providing for a maximum 40-hour week for pay purposes by 1940 and a minimum wage of 40 cents an hour by 1945. This minimum was raised to 75 cents before midcentury.

Government fixing of maximum wage levels and government limitation of the scope of union activity came as a wartime measure during World War II. Although organized labor continued to grow tremendously in power during this conflict, it became increasingly subject to government supervision. The first postwar Congress enacted the Taft-Hartley Labor Law with a view to redressing the balance between labor and management in the eyes of the law. It was hoped that this act would promote industrial peace. With the declaration of a state of national emergency following the Korean crisis in 1950, both the executive and the legislative branches of the Federal government developed plans to bring labor-management relations increasingly within the sphere of governmental jurisdiction. The long-range values associated with free collective bargaining were not lost sight of, however, in plans set forth for this emergency period.

Major areas within the industrial relations field. Three major areas of study within the industrial relations field merit consideration in some detail even within this introductory chapter. They are as follows:

1. Personnel policies and practices, including, for example, rationalized personnel administration techniques and procedures, human relations in industry, and labor-management cooperation.
2. Economic effects of labor policies, including, for example, wages, hours, employment, labor market, labor force, mobility, technology, and productivity.
3. Causes of industrial conflict and industrial peace, including, for example, areas and objectives of collective bargaining, negotiation procedure, the labor agreement, application in day-to-day relationships, arbitration, mediation, strikes, multiple-unit bargaining, and conditions of conflict and peace.

PERSONNEL POLICIES AND PRACTICES

Personnel policies and practices must be worked out on a case basis by the individual firm in much the same way that production, marketing, and financial policies and practices are evolved. There is no satisfactory substitute for a tailor-made personnel program. One of the surest ways to invite personnel-relations difficulties is to adopt, ready-made and without critical inspection, a personnel pattern that seemed to work elsewhere. Such a lifting out of context of specific practices is not merely wasteful of the limited resources of a firm, it is also likely to result in maladjustments within the firm. Nevertheless, we may review, to advantage, some of the personnel practices that a large number of firms with comprehensive personnel programs have found to be particularly valuable in meeting their individual personnel-relations problems.

The first personnel-relations department function that should be included on every list is that of *planning* a suitable program for the individual firm. The installation of a personnel-relations program involves the same type of planning all along the line that we noted in chapter 10, in connection with the installation of a production-control system and that we noted still earlier, in chapter 8, in connection with the selection of particular legal forms of business organization. The personnel-planning function is not limited to the initial installation period. On the contrary, personnel-relations officials must continually plan to meet changing industrial conditions with suitable policies and practices. These officials should also offer their counsel to top management officers at an early date so that evolving problems will tend to be anticipated and not faced on an emergency basis.

A second essential personnel-relations department function is that of compiling rec-

ords and statistics, undertaking manpower studies, and making reports on these and other pertinent aspects of personnel activity. At one level, it is very important that detailed, personal records be kept concerning every employee in the company. These records form vital source material for decisions on promotion or transfer and on discharge or lesser disciplinary action. At a second level, individual records are summarized to yield statistical data for analysis of the firm's manpower resources and needs. In times when labor is scarce and when young men are called away for military service, a firm's ability to handle its manpower problems may be the main determinant as to whether it is to expand or contract. At a third level, personnel-relations staff members develop their raw data into meaningful reports on such topics as composition of the labor force, absenteeism, and labor turnover.

A third function of this department, and one that was historically among the first to be performed by the personnel officer, is that of employment. The employment section of the personnel department is charged with the responsibility of maintaining an adequate supply of qualified employees. It must develop its own source of supply within the community. In order to compete with other employing bodies, the employment section must keep informed as to prevailing community hiring rates and other work conditions. It must develop its own system of job specifications so that staff members will know what characteristics they are seeking in applicants for specific openings. Then various techniques can be used to select qualified employees. These devices include the application blank, the checking of references and records, the interview, the physical examination, and the aptitude test.

The employment section usually indoctrinates new employees in the ways of the firm before delivering them to their assigned posts. Plant rules and regulations are explained, and various privileges and benefits accruing from employment in the firm are set forth as well. An employee handbook normally is developed to contain pertinent information, which is to be presented at this time. The "processed" employee is then presented to his supervisor in the shop. The employment section continues to follow his progress throughout the initial adjustment period.

At one time the prevailing practice was to have the individual foreman himself do his own hiring. Busy foremen were not able to maintain outside contacts, however, in the same degree that a centralized employment section can. Moreover, individual foremen did not tend to perceive the needs and interests of the plant as a whole at the time that they made individual hiring decisions. Conflicting policies followed by individual foremen often resulted in the creation of inequities, undermining employee morale. Centralization of the employment function was greatly accelerated for this reason as organized labor grew in strength and "striking power."

A fourth personnel function, which is closely related to employment, is that of promoting, transferring, discharging, laying off, and rehiring employees. An active program of "promotion from within," in conjunction with the timely infusion of new strength from outside sources as the need arises, will help to keep employee morale at a satisfactory level. A well-developed system of promotions and transfers should be mapped out for the information of both supervisory and nonsupervisory employees. Job specifications, which were to be used in hiring, are equally useful in mapping out the promotion and transfer program. Merit rating of employees on such qualities as quantity and quality of output, skill, physical and mental fitness, and cooperation is also useful in making selections. Age, length of service, education, and training are also factors that must be taken into account. A firm that pays more than lip service to the concept of "promotion from within" must provide adequate facilities for the training of employees who wish to upgrade themselves.

On the negative side, a personnel department must have regular procedures established to handle transfers of employees who are not satisfied or who are not satisfactory in their current posts. It must also have procedures carefully worked out to handle cases of discharge for cause. A firm should be very sure of its grounds and should document its case with detailed records and statements when "firing" an employee. In the event that the workload fluctuates seasonally or cyclically, more junior or less essential members of the working force may have to be laid off or furloughed for lack of work. The manner in which a firm handles its furlough problem or handles a "share the work" scheme is obviously of great importance for good or for ill in the maintenance of employee morale. Company policy on the rehiring of furloughed employees or former employees is also a matter calling for careful formulation in advance of action.

We have dealt with a fifth personnel function, that of training, in several other sections of this text. (See chapters 6 and 10.) We may stress again the fact that everyone can benefit from additional training at almost every stage in his career. The *form* of training, rather than the *fact* of training, is the main variable in each case. The indoctrination of new employees is one form of training. On-the-job instruction is another. Company classes, evening-school classes within the community, or even correspondence-school courses may play important roles in upgrading the workforce. The training of supervisors should be a continuing process within any firm. Foremen's conferences, executive-trainee classes, and executive staff conferences are widely used devices for the accomplishment of this training function. One of the tragic figures in any organization is the executive who builds himself into an "indispensable man" by neglecting the training of his subordinates.

A sixth personnel function, steadily growing in recognition, is that of administering job-evaluation and merit-rating systems. Job-evaluation measures the relative worth of specific jobs in relation to other jobs by application of a common yardstick. Merit-rating measures the relative worth of particular employees on particular jobs in order to determine differences in individual effectiveness.

A job is a specific collection of duties and responsibilities to be performed under definite conditions. One of the first steps in job evaluation is to determine what specific content is contained by each job that is to be evaluated. This preliminary information is gathered through use of job descriptions. Through analysis of preliminary job descriptions, a number of common job factors in terms of which specific jobs may be compared may be identified. Such factors as skill, physical effort, mental effort, working conditions, education, responsibility, and experience required may form the ingredients for a job evaluation plan.

After the preliminary job descriptions have been rewritten so as to present these factors in orderly fashion, the descriptions and the factors should be studied with a view to assigning relative weights to the half dozen or dozen factors that may be involved. Point systems may then be set up to assign definite values for each degree in which a specific factor may be judged to be present. For instance, in the 500-point, 11-factor plan advocated by the National Metal Trades Association, points to be awarded for working conditions range from 10 to 50, depending upon the degree to which unpleasant conditions are involved. Similarly, the points to be awarded for required experience range from 22 to 110 in five even steps, which may be carefully defined.

The process of rating new jobs is facilitated by comparison of its requirements on a factor basis with well-known "benchmark" jobs spotted at various points along the job-evaluation scale. For instance, a job requiring less physical exertion than that of a day laborer and yet more than that of an inspector falls somewhere between the values assigned to these two benchmark jobs

for this particular factor. The specific value to be assigned a particular job for a particular factor may more readily be determined if each degree in which a factor may be present is carefully defined in detail.

After jobs have been evaluated, they may be graphed on a job evaluation scale in accordance with point totals. Jobs that fall near each other within the range may be grouped into particular labor grades or job classes. For instance, under one particular system, jobs tending to cluster within the point-value range 400–424 are lumped into Labor Grade 5. The base-pay rates these jobs tend to command, within both the company and the local labor market, are then noted. A reasonable base-rate is assigned to Labor Grade 5, which has a definite relationship to Labor Grade 4 and Labor Grade 6, as well as to prevailing base-rates for specific jobs that fall into Labor Grade 5. A range of base-rates is assigned to each grade so as to take into account reasonable differences in prevailing base-rates and to provide for reasonable in-grade pay raises as an employee gains in skill on a particular job. A base-rate of $1.65 and a range of $0.25 above base serves the purpose for Labor Grade 5 in the particular instance cited. Whereas but one firm in eight used job evaluation prior to World War II, approximately three firms in five had job-evaluation plans in operation at the war's end.[10]

The actual base-rate that Machinist-Helper Thomas Brown might receive while working on his job, which falls within Labor Grade 5, might be influenced by his score on a merit-rating form. Tom's supervisor might be asked by management to rate his men for various reasons. A merit-rating program might help to determine 1) which employees merit in-grade pay increases, promotions, transfers, or demotions, or 2) which employees may have a grievance case if a new supervisor evaluates particular individuals very differently from previous supervisors. The existence of a merit-rating plan encourages supervisors to observe their subordinates more closely than they otherwise might. It encourages employees to perform more nearly at capacity, as it takes into account individual differences. A standard merit-rating system also encourages individual supervisors to follow more uniform patterns in their handling of employees in such important matters as promotions and in-grade pay increases. Moreover, in discussing a particular rating with the employee concerned, supervisors find the occasion to make suggestions for the improvement of employee performance.

As in job evaluation, the half dozen or dozen common factors selected for merit rating must be 1) carefully defined, 2) assigned weights, and 3) divided into specific steps or degrees on a scale. Some commonly-used factors for merit-rating purposes are quantity of work, quality of work, influence upon work of others, supervision required, initiative, knowledge of present job, and potentialities for growth. If a plan is to be successful in operation, it must be carefully presented and explained to both supervisors and employees. Supervisors, particularly, must understand the objectives of the system, the rating technique to be used, and the uses to be made of the final ratings. The personnel-relations officer typically serves as chairman of the company-wide committee that strives to adjust deviate rating patterns submitted by certain individual supervisors for their particular groups, so as to conform with the pattern more characteristically used for the company as a whole. The use of merit-rating systems increased sharply during the course of World War II, rising from one firm in six in 1939 to better than one firm in four in 1946.[11]

Job evaluation and merit rating indicate

[10] National Industrial Conference Board, *Personnel Activities in American Business*, Studies in Personnel Policy, No. 86, page 12. New York: National Industrial Conference Board, 1947.

[11] *Ibid.*, page 13.

the *relative* worth of jobs and of men on jobs, respectively, but they do not in themselves reveal the absolute or actual price a company should pay an individual for performance of a job. A seventh personnel function, that of recommending wage policies and wage-payment plans to top management, is concerned with the actual price a firm should or must pay for its labor. Although a man does not work for pay alone, wages are fully as important as any other factor in the personnel-relations picture.

Conflicting short-run interests of labor, management, owners, and customers are brought out in dramatic fashion in terms of the wage issue. A study of wage theory indicates that employees are paid for 1) time spent at work, 2) energy devoted to work, and 3) willingness to cooperate.[12] The importance of the cooperation factor is best shown by the fact that wages rise with productivity over the years even though methods changes, which account in large part for increased productivity, permit workers to spend less time and energy on the job. The personnel-relations manager must also be sensitive to the position of the individual producer, however, as compared to that of industry in general. When competitors are bidding wages upward or downward, an individual producer cannot make wise wage decisions without careful consideration of the general wage-price trend.

A great many individual companies may have a common policy of meeting the "going wage rate" in their community, and yet each may have distinctly different wage-payment plans. In some instances, wages are simply computed in terms of some time unit, such as an hour, a day, or a month. The wage payment itself is not, under this system, used as a direct incentive to encourage increment output by the "day work" employee. In sharp contrast, a number of incentive wage plans vary the amount paid in accordance with increases or decreases in output.

If an incentive wage-payment plan—whether piece rate, bonus, or combination of the two—is easily understood and related to effort, it may stimulate higher output, raise morale, and contribute to the well-being of the labor force. A successful incentive plan makes the worker his own policeman and his own supervisor, in many respects. An alert personnel-relations manager will familiarize himself with alternative plans, and then solve his own firm's problems on a case basis. Moreover, he will regard job and wage stabilization as desirable steps leading to enhanced economic security, to the extent that feasible stabilization plans can be worked out for his firm.

An eighth personnel-relations function is that of administering the security and benefit programs operated by the firm. The wage and salary stabilization controls imposed by the government during World War II made both labor and management increasingly conscious of the role of so-called "fringe benefits" as supplements to wage earners' basic pay. Tax laws permitted the deduction of many of these benefits from taxable income. On an increment cost basis, then, many firms were able to provide substantial benefits for their employees at a real cost to stockholders of but a fraction of the dollar outlay. At the war's end, group life-insurance plans were offered to employees by four companies out of five, whereas, prewar, three companies out of five participated in such plans. Group health and accident benefits were offered by two companies out of three, post-World War II, whereas but one company out of three had such plans, prewar. The proportion of companies with formal employee-retirement benefit programs over and above social security increased during this period from one firm to more than three firms in eight. One company in four retained the payroll savings plan for bond purchase, which was almost universally adopted during the war years. About one firm in four has an organized system for making loans to employees."[13]

[12] Michael J. Jucius, *Personnel Management*, page 364 Chicago: Richard D. Irwin, Inc., 1950.

[13] National Industrial Conference Board, *Personnel Activities in American Business*, Studies in Personnel Policy, No. 86, pages 9–10. New York: National Industrial Conference Board, 1947.

Company medical and health services, which we may list as a ninth form of personnel-relations service, also increased significantly during the course of World War II. More than three companies in five now give new employees physical examinations as part of the hiring process. Two firms in five are able to maintain medical sections for employees as part of their personnel administration. One firm in four gives periodic physical examinations to currently-employed workers. Although just one firm in ten employs a physician on a full-time basis, nearly half of our industrial establishments have full-time nurses on their payrolls. Part-time professional personnel serve the needs of other firms. Three companies in five have safety committees, which are typically charged with responsibility for 1) eliminating unsafe conditions and practices and 2) stimulating safety consciousness among employees. Safety pamphlets dressing up safety regulations with cartoons and illustrative pictures are distributed by one industrial firm in four. The importance attributed to in-plant feeding as a means of improving and preserving the health of workers is underlined by an increase in companies operating their own cafeterias from one in four in 1940 to one in three in 1946.[14]

During World War II, the value of recreational programs in improving employee health and morale received wide recognition. Industrial recreation may be listed as a tenth personnel relations function. Many firms have had athletic, social, and cultural programs in being for several decades. Management and workers and their respective families become better acquainted under recreational conditions. Such activities are a source of enjoyment for all parties concerned. One company in four has some type of employee association or recreation committee to plan recreational activities for the group. One firm in nine employs a recreational director to administer a formal industrial recreation program. Among large firms, this figure is one out of three. Such innovations as "music at work" and formal relaxation periods in midmorning and/or midafternoon are also related to the recreational needs of the "total employee." [15]

Another important function of the personnel-relations department, which is function eleven on our list, is that of providing information for employees. The official bulletin board is a medium for conveying information in four plants out of five. One firm in three issues handbooks explaining practices and policies of the firm. Almost the same proportion publishes company newspapers, magazines, or newsletters at periodic intervals. These publications range from mimeographed letter sheets to elaborate printed magazines, replete with photographs and color art work. Annual financial reports in humanized form are issued to employees by one firm in nine. Stockholders, too, benefit from these nontechnical charts, tables, and photographs.[16]

The channels of communication within a firm should provide for a 2-way flow of information and ideas. In this connection, the use of employee suggestion systems to encourage and reward employees for constructive ideas was widely publicized during World War II. Many firms adopting such systems during the war did not administer them with sufficient care and imagination, however, to make the plan "stick" in the company personnel-relations program during postwar years. About one firm in four operated a formal suggestion system during the immediate postwar period.[17]

A number of firms, notable among which is the General Electric Company, operate comprehensive community- or public-relations programs that serve as a broader framework into which personnel relations fit as an integral part. Operation of this program is function twelve in our list. G.E.,

[14] *Ibid.*, pages 10–11.
[15] *Ibid.*, page 15.
[16] *Ibid.*, page 14.
[17] *Ibid.*, page 12.

for example, regards each of the 100-odd communities in which its plants are located as a locality having a peculiar interest in knowing and understanding G.E. General Electric employees typically form an important segment of the labor market in these communities.

G.E. wishes to be known as a "good employer," yet does not wish to disturb unduly the specific labor-market structure it finds in each community. G.E. community-relations programs, therefore, while adhering to a common approach over-all, are specifically tailored in content to fit each community involved.

When labor problems arise, G.E. takes steps of a public-relations nature to inform its employees, their families, and their neighbors in the community of the reasoning underlying the company's stand on particular issues. Full-page newspaper advertisements are characteristically used by G.E. In addition to dealing with labor subjects, these advertisements deal with current economic and political issues, be it inflation or deflation, budgets, taxes, prices, or government regulation. Management officials also play active roles as individuals in community affairs. Fulfillment of these roles involves participation in service clubs, addresses before civic groups, and leadership in community drives and projects.

In the post-World War II period, three American firms out of four had agreements through which they dealt collectively with one or more unions. These trade-union agreements, in some instances, were limited to employees following specific trades within the firm. In other instances, they were company-wide agreements that covered all plant jobs. Just prior to World War II, two firms out of five had labor-union agreements. Only one firm in ten had such an agreement when the Roosevelt administration came into power in 1933. It may readily be observed that the function of dealing collectively with labor, which is function thirteen in our list, has become one of the prime duties of the personnel-relations department in most firms. This function includes the supervision of contracts with organized labor groups, the offering of advice and aid to line-department officials in the negotiation and administration of labor contracts, and the supervision of contacts with government agencies concerning labor matters.

The issue of unionism itself—that is, whether or not employees may organize collectively and be recognized by the employer as a bargaining group—has progressively become less and less of an issue during recent years. The impressive growth figures chalked up by both the C.I.O. and the A.F. of L. during the decade of the '40's lend emphasis to this statement. Both organizations more than doubled their dues-paying memberships during this period. Union-security provisions more and more frequently were included in the contracts that were negotiated. Approximately one firm in eight had yielded a "closed shop," which requires union membership at the time of hiring and for the duration of the contract as a condition of employment, before the Taft-Hartley Act barred such provisions after 1947. One firm in four had granted a "union shop," which requires union membership as a condition of employment for the duration of the contract, but does not require prior union membership as a condition of hiring. This union shop agreement has continued to grow in favor subsequent to the passage of the Taft-Hartley Act.

One firm in three had accepted a "maintenance of membership" clause in its post-war labor agreement, which requires as a condition of employment for the duration of the contract continuing union membership of those who are members of the union and those who thereafter join the union. Similarly, one firm in three cooperated with its union to the extent of operating a "check-off" plan in which the company deducted union dues from union members for the union treasury, provided that the employee himself authorized such action at the outset and renewed this authorization annually. Nine firms out of ten having un-

ion contracts include in those contracts union-security clauses in one or more of the forms outlined above. As three firms out of four have union agreements, approximately seven firms out of ten have both union agreements and help to protect the security of the union in that agreement.[18] These data are included in some detail in order to emphasize the point that unionism has come of age in the United States. The real issue for most firms is not unionism versus non-unionism. The union problem today is that of building a close, working relationship between labor and management that will enable constructive union leaders with constructive union programs to emerge as the representatives of labor. Such leaders are gradually replacing labor leaders of "the old school," who, like management leaders of "the old school," could think of labor-management relations only in terms of conflict and strife.

Union-management relations naturally deal primarily with subjects that employees believe to be important to them in the job situation. A broad survey conducted during the 1940's by the National Industrial Conference Board indicated that the following five factors, out of a list of 71 possible morale determinants, were selected by employees as being "most important":

1. Job security—employment stabilization.
2. Opportunities in the company for advancement.
3. Compensation (base pay).
4. Employee financial benefits (group life insurance, sickness insurance, and pensions).
5. Practice of informing you of your job status (both of your success and failures).

A second group of five factors included the following items:

6. Type of work.
7. Vacation and holiday practices.
8. Supervisors' temperament and personality.
9. Profit-sharing plans (excluding employee savings plans).
10. Physical working conditions (on-the-job).

A third group of five factors lined up as follows:

11. Company's attitude toward employees (its interpretation of policies—whether liberal or conservative).
12. Total hours worked per day, per week.
13. Employee feeding facilities (restaurants, lunch rooms, cafeterias, canteens, mobile kitchens).
14. Practice of hiring outsiders for responsible jobs versus "promotion from within."
15. Company medical and health programs.

Executives of the companies, in which the employees worked, and labor leaders of the unions, in which the employees held membership, were asked to predict the rankings that would be assigned by the employees in their respective companies to the various morale factors. Both union and management men placed "compensation (base pay)" first, whereas the employees gave it no better than third place. Both union and management men gave second place to "job security—employment stabilization," which had indeed led the employee list. The employee list's second factor, "opportunities in the company for advancement," was ranked fourth by management and 18th by union leaders. The fourth employee factor, "employee financial benefits (group life insurance, sickness insurance, and pensions)," was ranked eighth by management and 19th by union leaders. The fifth employee factor, "practice of informing you of your job status (both of your success and failures)," was not even recognized as being in the top half of the list of 71 factors by either management or union leaders.

The factors ranked third by management (vacation and holiday practices) and by union leaders (total hours worked per day

[18] *Ibid.*, pages 7–8.

per week) were ranked seventh and twelfth, respectively, by employees. The factors ranked fourth by management (opportunities in the company for advancement) and by union leaders (physical working conditions on-the-job) were ranked second and tenth, respectively, by employees. The factors ranked fifth by management (physical working conditions on-the-job) and by union leaders (labor unions) were ranked 10th and 27th respectively by employees.[19]

The only tentative conclusion we may wish to draw from this study at this time is that neither the management men nor the union leaders who negotiate labor contracts and settle employee grievances have a clear idea of what actually is in the mind of the average employee at any given time. The list of 15 factors (see above) does not provide *the* answer. The factors may be expected to change significantly in response to changing times and situations. The specific items included on the list do furnish a point of departure, however, for further study upon specific occasions, as the need for new information may arise.

Collective bargaining in industrial relations refers to concerted action by workers pressing their common interests in negotiating with an employer. The workers are commonly represented by union leaders. The employer may be either an individual owner or management officials who represent owners. The bargaining involved in collective dealings implies proposals and counterproposals put forth in give-and-take spirit until a solution is reached, which is, for the time being, acceptable to both sides. This agreement is then reduced to contractual terms, binding upon both sides for a definite contract period of one or more years.

Although particular contracts may vary considerably in scope of coverage and in specific content, a typical labor agreement would contain many of the following provisions:

a. *Union recognition, union security, and specification of the bargaining unit:* The fact that an agreement is signed implies "union recognition" in some form. Its specific nature is often spelled out in the contract. Various union-security measures, such as the closed shop (pre-Taft-Hartley), the union shop, the maintenance of membership clause, or the check-off, are specified in the contract, if appropriate in the particular industrial situation involved. The bargaining-unit issue is also settled in the contract. A union may bargain 1) for its members only, or 2) for its members and other employees of same craft or plant unit, or 3) for all employees of the firm as sole bargaining agent. This bargaining-unit issue is a matter of great importance that must be specifically settled in the contract.

b. *Wage scales and hours of work:* Wages and hours rival job security and opportunities for promotion as matters which are close to the workers' hearts. The contract typically specifies wage scales for various labor grades. In some instances, cost-of-living and productivity adjustments are also built into the contract clause. The standard work week and work hours are usually specified, with penalty provisions for overtime work or irregular hour work.

c. *Job security rights:* The seniority system, which is to be observed and administered by management, should be defined in detail. The activities coming within the seniority rule, ranging from promotion on the one hand to order of layoff on the other hand, should be listed. The unit on which seniority is based for each purpose, such as departmental, plant-wide, or company-wide, should also be specified. The weight to be given to seniority in comparison with other factors, such as efficiency or ability, should also be stated, at least in terms of some generalized, verbal formula. In the event that certain groups are to be exempt from the seniority rules or are to acquire "super-seniority," as is frequently the case

[19] National Industrial Conference Board, *Factors Affecting Employee Morale,* Studies in Personnel Policy, No. 85, pages 5–22. New York: National Industrial Conference Board, 1947.

with key maintenance employees and with shop stewards, these individuals should be specified by management and union, both as to jobs held and as to relative numbers permitted. Apprenticeship rules on the one hand and retirement provisions on the other hand may also fall within the job-security category.

d. *Safety and health conditions:* Many contracts have safety rules and health requirements, binding upon management and employees alike.

e. *Grievance procedures and procedures for administration and interpretation of agreements:* During a contract period, a great many questions arise on issues not specifically covered on a case basis in the contract itself. Many of these involve single employees or small groups of employees. Detailed grievance procedures are usually set forth in the contract. The first step in the grievance ladder is for the complainant to take his case to his foreman, either by himself or accompanied by a union steward who is familiar with that shop. If the foreman cannot satisfy the employee, his case may be taken in the second instance to the superintendent of the shop. If the decision is adverse at this level, the case may be appealed to the higher officials of the company by the employee and the higher officials of the union.

A final step provided in many contracts for specified issues is an appeal for arbitration by an impartial board or umpire. It should be remembered that unless grievance procedure is orderly, objective, and of reasonable duration, the no-strike implications of a labor contract may be wiped out by a "wildcat" strike. It sometimes happens during the life of a contract that new problems arise that are not covered in the existing contract. The normal machinery of administration and interpretation will not settle these items. Interim collective bargaining may be called into play or the status quo may be preserved until the current contract elapses. In some cases the company and the union agree in advance to follow definite procedures of 1) conciliation, in which the two parties give and take without outside aid, 2) mediation, in which an outside person or group acts as adviser and go-between in negotiations with both sides, and 3) arbitration, in which an agreed-upon arbitrator may reach an independent decision upon specified topics and, if the arbitration is compulsory rather than voluntary, make the verdict "stick."

f. *Contract period and provision for renewal:* Contract agreements are for specified periods. In certain instances, preliminary notice must be filed of intention to abrogate the agreement. Procedures to be followed for renewal of contract relations are also set forth in the typical labor agreement.

ECONOMIC EFFECTS OF LABOR POLICIES

A brief discussion of possible economic effects of alternative labor policies is presented at this time to indicate the nature of problems typically encountered in the realm of labor economics. The problem areas, which we shall review briefly, involve the concepts of labor force, the mobility of labor, technological change, wage policy, and the economics of collective bargaining.

Labor Force. The labor force in our society includes not only the currently-employed population, but also those who are temporarily or involuntarily unemployed, though willing and able to work. This group excludes only those individuals who by reason of age, family status, or physical infirmity are supported by others.[20] From this definition it is apparent that the labor force could be greatly expanded, if need should arise, by modification of the institutional structure that keeps children in school long after they might be productive industrially and that keeps women in the home in a majority of cases.

[20] Wilbert E. Moore, *Industrial Relations and the Social Order,* pages 211–212. New York: The Macmillan Company, 1946.

Even the classification of certain individuals as "unemployable" is a relative matter that varies considerably under different industrial conditions. When the demand for labor rises, useful tasks can readily be found for "the lame, the halt, and the blind." Enforced residence in a penal institution does not in itself reduce the labor force, for such individuals, with training, may become more productive both during and after confinement than they were in earlier life.

The actual shape of the labor *supply* curve is rather difficult to predict at the two extremes of the labor *demand* curve. If wages were to be driven down to a very low level in times of severe depression, a number of potential workers would leave the active market, preferring government relief to private employment at less than a "living wage." If wages were to be driven up to very high levels in boom times, a number of active workers would voluntarily leave the market. This rather surprising situation is explained by the fact that the average family has more than one breadwinner. In extremely good times, the principal wage earner needs no assistance in supporting his family in a befitting manner. Under these circumstances the wife may give up her job for increased leisure and for increased activity at home. The young sons and daughters may give up their jobs, or else refrain from seeking jobs, in order to invest in increased education at the high school and college level. The principal wage earner himself may reach a point at which he prefers increased leisure to increment earnings for longer hours or for omitting vacations. If the boom period is associated with a military defense effort, however, considerations of patriotism and of occupational deferment tend to keep additional workers on the job.

Mobility of labor. Even if the labor force is sufficient over-all to meet the aggregate needs of employers, there remains the critical problem of "spotting" the right person in the right place at the right time, both to take advantage of a job opportunity and to fill a particular employer's need.

Traditional economic theory has tended to assume the "fluidity" of the labor market. Necessary conditions for this fluidity would include 1) a labor system that allows workers to shift occupations and positions at will, 2) the absence of barriers to migration across territorial boundaries, 3) the presence of an adequate communication system that enables workers to hear of openings in relatively distant places, 4) the primacy of economic advancement as an effective force in determining residential choice, and 5) the ability of the potential worker to make a correct choice in his own self-interest.

The restrictions on mobility imposed by economic barriers, social barriers, geographical barriers, imperfect communication, noneconomic considerations, lack of comprehension, and individual inertia are matters of common knowledge, which need not be detailed here. Nevertheless, it should be remembered that the labor force possesses important characteristics that make for long-run mobility, as well as for frictional immobility.

Individuals comprising the work force do not have the same characteristics, the same abilities, and the same training. The problem of supplying labor demand is far more complex than the mere supplying of willing hands. Labor shortages and surplusages typically occur simultaneously within the same labor market. An ample number of laborers may be on hand in a particular community at a time when a severe shortage of skilled labor is being experienced. Firms faced with this situation may 1) devote time and resources to the training of available labor for higher-level performance, 2) break down existing jobs into component jobs requiring lower-order skill and training, and/or 3) seek to attract skilled workers from other localities by offering special inducements to encourage labor mobility in a particular direction.

Technological change. We have indicated that one method of overcoming a shortage

of skilled labor was to break down existing jobs into component jobs requiring lower-order skill and training. This process has been taking place over a long historical period, with respect to specific units of output. It involves the broad concept of technological change that has played a key role in our modern industrial society. Technological change has clearly broken down existing jobs into component jobs requiring lower-order skill and training *with respect to specific units of output.* For instance, a pair of shoes that once required dozens of hours of labor by a skilled cobbler is now produced in a fraction of that time by groups of specialized workers, no one of which possesses the varied skills required to produce a complete pair of shoes unaided by other cooperating groups.

The operation of the process of technological change does *not* mean, however, that the skills required in our expanded workforce are being diluted *over-all.* The skilled craftsman who might have been a cobbler in the old days now devotes his energies to the high-level task of making tools and dies with which other less skilled workers can turn out increased quantities of shoes. His friends from the farm and kitchen man the mechanized production lines.

The substitution of machinery for labor has had an historical tendency to upgrade labor productivity and labor remuneration. The specific hardships experienced by displaced workers, which have led naturally to movements for resistance to change, should not obscure the over-all pattern. Skilled workers are just as much a part of the nation's treasure today as they were a century ago. Technological progress has created productive posts for the unskilled as well as for the skilled. When great masses of workers are added to what formerly was an elite guild of craftsmen, the skill possessed by the average member of the new group will understandably be less for some time than that boasted by the average member of the old group. Nevertheless, each member of the entire group might well have been upgraded in skill from his former station. Under such circumstances, the productivity of each member of the group will have increased significantly, and his standard of living will have followed suit as well.

Wage Policy. Other things being equal, the great majority of us favor a high-wage policy, particularly for ourselves. We are sincere in this point of view, for we know that we should be willing to put out more to take in more or to take more home. We have observed instances in which "cheap" labor has been high-cost labor through low productivity and expensive blundering. The competent man who uses materials and machinery to best advantage is frequently worth two or three times the pay of the incompetent individual, though he rarely receives more than a fraction of this differential in extra take-home pay.

The wage problem confronting the typical business administrator, however, is not quite this simple. By definition, all firms cannot follow a high-wage policy successfully. A firm that deliberately pays its employees a higher wage than the general competitive rate in its labor market typically does so in an effort to secure "the cream of the crop." It also may wish to avoid the hidden costs of high labor turnover. A firm that pays high rates simply to offset poor working conditions is, in reality, merely meeting the "going wage" of its labor market. Many other firms follow a policy of meeting competitive wage rates for their community, while seeking to hold qualified employees on nonwage considerations as well. Still other firms pay comparatively low wages in the belief that satisfactory results can be achieved in their particular lines with relatively mediocre employees. The firms that follow this policy do not, as a rule, spell out its implications in this fashion. Indeed, the situation is not usually clearcut. Some firms pay relatively high wages to top flight supervisors and to key employees. They then count upon these individuals to obtain satisfactory results by getting the most out of other

low-paid employees. Management's motivation in such cases is just as often a desire to "do right" by the firm's few high-caliber employees with its limited resources as it is to "exploit" the firm's run-of-the-mill workers, who are being paid as much as they could command elsewhere at their level in the market anyhow.

In setting wage policies for their firms, business administrators should be cognizant of their obligation to 1) offer a satisfactory product at an attractive price, and 2) earn a return on capital invested, as well as 3) pay employees a rate commensurate with the services they render in the manufacture of this product. Under this concept, a firm's wage policy is set by balancing the interests of employees, customers, and investors. If management's decision in this respect is a wise one, the firm will tend to thrive. In such event, there will be a larger "pie" for the parties at interest to share, and each may be more content with the division.

Economics of collective bargaining. This concept of the size of the "pie," as well as of the share going to each participant, is of prime importance in the economics of collective bargaining. Labor and management are interested in the same pie, namely, the income produced by a firm or, more broadly, the goods and services produced by the over-all economy. This common interest does not mean, however, that the interests of labor and management are "basically the same" in the ordinary sense of that term. There exists a broad range of discretion in the allocation of income produced by a firm.

This range lies between the hard core of funds needed by labor in order to stay on the job at all and the hard core of funds needed by owners in order to refrain from liquidating their enterprise as a going concern. The funds that correspond to this range of discretion might either go to owners, in the form of increased dividends or increased equity, or they might go to labor, in the form of increased wages or increased bonuses. The limits of this range and its absolute size are constantly shifting, in keeping with changes in the internal and external status of the firm. Management's attitude toward this question of allocation of income also varies with changes in the total situation. It is with respect to the exact division of this "optional slice" of the pie for any given period that management and labor typically take issue with each other in the economic sphere.

In order to explain the actions of labor and management organizations in the industrial relations field, we must understand their respective objectives and purposes, as well as their strategy and tactics in conflict situations. Labor unions, for instance, have objectives and serve purposes much broader than the economic advantages they seek to bring to their members. Economic aspirations of workers are not to be overly-discounted. They comprise the greatest single concern of both workers and unions in their relations with management.

Yet, in addition to exerting pressure for higher wage levels and increased job security, unions serve as an alternative system for achieving other ends not readily gained by workers through the normal organization of the industrial plant. The shift in power that frequently accompanies organization of workers into unions is a matter of immediate concern to union members. Control over the action of others for one's own purposes or for commonly-shared purposes brings to workers gains of a nonmaterial nature that are frequently valued as highly as the gains of a material nature, which accompany this increase in power.

Neither power nor money are ends in themselves—except for misers. Yet both are symbols of social esteem in our competitive society and both may be used as "universal means" to the achievement of more ultimate ends in the scale of human values.[21] We have observed earlier, both in the Haw-

[21] See *ibid.*, pages 336–342.

thorne studies and in the National Industrial Conference Board questionnaires, that the average worker's goals include the achievement of a satisfactory social status and the establishment of pleasant working relations, as well as the creation of conditions that make for job security. Insights into the motivation of individual workers will aid us in understanding the activities of union organizations.

Unions naturally seek to establish their own security through such devices as the closed shop, the union shop, maintenance of membership, and the check-off. Some unions also use these security devices, along with control of apprenticeship training, in an effort to achieve a monopolistic position with respect to the supply of labor. Unions have no monopoly on this monopolistic approach, however, as witness similar actions by some of our most skilled professional groups.

Labor unions are closely identified in the public mind with the use of the strike as a weapon to enforce demands or to increase union power and prestige. Some strikes are marked simply by the action of groups of workmen walking off from their jobs. Pressure is thereby brought against the employer to accede to union demands in order to avoid the consequences of loss of plant production. If plant production can continue, in whole or in part, without the presence of the strikers on their jobs, pickets bearing signs or other objects are ordinarily assigned the task of dissuading nonstriking workers from entering the plant or of dissuading the buying public from patronizing the employer's establishment during the course of the strike.

Occasionally strikes "just happen." These walkouts are termed "wildcat strikes" and are usually settled rapidly, unless they set off a train of events resulting in a full-fledged, authorized strike. Most strikes are of this latter variety. The authorized strike involves careful preliminary planning and organization. The strategy and tactics to be used are set forth in rather specific fashion. The stated objectives of the strike are formulated for public consumption. Alternative "settlements" are prepared to fit situations that might actually develop. These plans should encompass all possible situations, ranging from "total victory" to complete defeat.

The timing of the strike is also a matter calling for considerable study. A union will normally set a strike date at a time when its strength is at a maximum relative to the employer's strength. The union's strength is measured in terms of close-knit organization, sufficiency of strike-reserve funds, favorable demand for labor, and active interest of rank-and-file members in the strike cause. An employer is normally in a poor bargaining position at times when business is expanding in a boom market, when the firm is nearing its seasonal peak, and when labor is in tight supply.

A strike is, in good part, an economic weapon, but it is in no sense an "economical" weapon from the standpoint of labor—or management or society as a whole. Union members are typically cut off from all sources of income for the bulk of the strike period. The union-treasury benefits, odd-job earnings, and, eventually, unemployment-relief checks are almost invariably pitched near the bare subsistence level. Union leaders have on their hands the difficult task of maintaining morale among strikers *and* their families, of enlisting cooperation under conditions of stress by workers who are not accustomed to this form of disciplined cooperative activity, and of maintaining the attack against the best efforts of employer's representatives to blunt the strike's effectiveness.

In addition to the direct-action strike, labor has in its arsenal of weapons a number of indirect economic measures for bringing pressure to bear upon the employer. These measures include 1) "the slowdown" in which workers "soldier" on the job, 2) the "positive" boycott in which union members are asked specifically to withdraw patronage from a firm, and 3) the "negative" boycott in which union members are merely asked to buy only from

firms in good standing, as, for example, from firms able to display the "union label." Unions also may turn to the courts, the government, and the public for aid in certain instances. In a tense situation at the local level, however, the union has traditionally fared second best when competing with the employer for the support of these three outside bodies.

The managers of a firm are not simply the duly appointed agents of the ownership interest. In a manner not totally unlike that characterizing union organization, management organization within a firm has objectives and serves purposes that are broader than the economic advantages it seeks to bring to the various parties at interest in the firm. Control over the actions of others in the production of goods and services enables management members to use the talents and energies of subordinates for purposes important to management during the course of the production cycle. The increases in power and in income accruing from successful operations conducted by members of the management team enable individuals to achieve goals that are important to them. Social status, working relations, and job security are not unknown concepts in managerial circles, although their specific content differs somewhat from that visualized by the average production worker.

When workers seek to alter the existing distribution of power and income by initiating union action, there is a tendency for management to resist union efforts on both grounds. The issue at stake is regarded by both sides as going beyond the monetary cost or value of labor's immediate demand. Power, like income, is a "universal means" convertible into other forms of value that particular individuals desire.

During the course of an industrial conflict, the specific grounds upon which each participant bases its stand are likely to undergo important changes. In some instances, the shifts tend to reflect the relinquishment by management and/or labor of preconceived ideas in the face of newly-tested reality. In other instances, the shifts tend to reflect the hardening action of sentiments and emotions built up during the conflict. This latter action often leads both union and management leaders to cling tenaciously to "unreasonable" points of view in the face of emerging reality. We have already outlined the weapons upon which labor may draw under such circumstances. We may, therefore, focus our attention at this time upon weapons stored within the arsenal of management for use during labor conflicts.

In some respects, the "lockout" is the weapon of management, which corresponds to a strike called by employees. By closing his shop, a manager may throw his employees out of work, cutting off their source of income. Such an action, if timed for a period when the company is in a strong bargaining position and when the union is weak and unprepared, might win a point for management. The lockout is of relatively minor importance in modern industry, however, for the cost of work stoppage to a firm typically outweighs by far the possible gains to be recouped from labor. In fact, the very existence of the lockout concept is oftentimes a liability for management, for it enables union leaders to assert that a work stoppage, which management has labeled as a strike, is in reality a lockout.

Certainly, in a background sense, any bona fide industrial dispute resulting in work stoppage contains elements of both the lockout and the strike. The fact that labor unions are typically on the offensive to change the status quo forces them to precipitate a strike far more often than management is forced to resort to the lockout. From the public-relations point of view, this strike-versus-lockout issue is far from being an academic chicken-and-egg discussion. When innocent bystanders in the community suffer in tangible fashion as the result of industrial warfare, public opinion can oftentimes be marshalled with telling effect against the participant who appeared first to pull the trigger.

Employers have found that tactics designed to discredit organized labor as a force destructive of property rights and minority human rights can be employed with telling effect during the course of a major labor-management conflict. The great body of public opinion, which is normally sympathetic with labor in general, can be made to turn against a specific group of union leaders if it can be shown that these men, through their actions, were in some way responsible for loss or injury to others. Just as labor is prone to use the lockout concept for smear purposes, management does not overlook the considerable advantages to be derived from exploitation of dramatic incidents resulting in property damage or, preferably, in bodily injury to relatively innocent bystanders. The propaganda aspects of such an occurrence can sometimes be worked up in a manner that will dishearten the rank-and-file of the strikers.

The force of public opinion can also be developed by employers in a manner that will enable them to appeal successfully to "the forces of law and order" within the community. At the informal level, these forces may consist of "citizens' committees" formed for the express purpose of breaking the strike. At the formal level, these forces may include the local courts, the local police, or even the national guard. Until recently the framework of our legal system was such that employers could readily find grounds to appeal to the courts for relief from pressures placed upon them by striking workers.

Historically, the employer had at his disposal some powerful weapons that labor legislation has removed from his arsenal during recent decades. These weapons included 1) the "company union," an "inside" union dominated by management, which was used as a device to keep out independent unionism, 2) the "yellow dog" contract by which the worker agrees not to join a union as a condition of keeping his job, 3) the open blacklist, which informed employers of a region of the names of active union members who might seek employment in their firms. It may be hoped that the professional strikebreaker, as distinguished from the "scab" worker who continues to work or accepts a company job during a strike, and the industrial espionage agent will eventually decline in utility to the point at which they may be listed with the above three extinct practices.

Employers also have the backing of powerful allies belonging to various employers' associations. Such aid may be limited in normal cases to moral support or institutional advertising efforts. But in times of crisis extraordinary measures can be taken by employers' associations, which possess certain advantages accruing to organizations "in being." It should be noted that the point of view of certain powerful and influential employers' associations, including the National Association of Manufacturers and the chambers of commerce, has changed significantly during recent decades as labor-management relations have become more settled. The associations now serve the purpose of bringing "old guard" employers into line fully as often as they serve the purposes of these employers in "holding the line" against inroads by labor.

THE "CAUSES OF INDUSTRIAL PEACE"

Although industrial conflict is assuredly an important part of industrial relations and the ultimate weapons of the participants are very much in evidence throughout the process of collective bargaining, it is important that we study the "causes of industrial peace," as well as the techniques of industrial warfare. A number of mature labor leaders have joined with representatives of management during recent years to stress the need for a positive approach to the problems of industrial relations.[22] Although

[22] See "The Study for the Ford Foundation on Program and Policy," *Report of Business Division.* San Francisco; 1949.

progress will tend to be discernible only if measured in decades rather than in years, it is probable that our institutional structure is reshaping itself in ways that will cut down the scope and frequency of industrial conflict within modern society. The Marxist thesis would insist upon a complete reversal of this optimistic statement. A considerable body of evidence is shaping up to indicate that the Marxists are wrong about the world's leading example of an advanced capitalistic state—the United States of America.

Aside from institutional changes that hold promise of improvement in the basic mechanism of our system of relatively free collective bargaining, we may point to a number of promising developments at the day-to-day level in the industrial relations field. In the settlement of specific grievances arising during the period in which a labor agreement is in force, labor representatives and management representatives are learning how to cooperate in seeing that settlements are to the mutual advantage of both parties. Union leaders favor orderly grievance machinery that gives the union a voice in the determination of conditions of work. Management leaders recognize that orderly grievance procedures minimize worker dissatisfaction, which may precipitate wildcat strikes or otherwise affect adversely plant efficiency.

A more advanced type of union-management cooperation is represented by "joint research" conducted by labor-management teams seeking to improve the competitive position of the firm with relation to the industry, or of the industry in relation to the economy as a whole. In the garment and the hosiery industries, where the unions tend to be strong and many unionized firms tend to be weak, notable results have been achieved by union-management committees seeking to eliminate waste, improve quality of product, and expand the market. The union motivation in such cases results partly from a desire to protect the unionized portion of the industry from inroads by nonunion competitors and partly from a desire to increase the size of the "pie" to be cut.

In these industries the question of the ability of the firm to pay increased union demands is typically far from academic. Hard-pressed managers are also less concerned about the necessity for preserving inviolate all of the traditional "prerogatives" of management.[23] The influence of the government as a "third party" that is playing an increasingly important role in industrial relations, particularly during times of national crisis, lends encouragement to a belief that labor-management cooperation will serve to improve the over-all relations of the two primary parties at interest in industrial relations.

The basic problem of industrial relations —as of social relations in general—is the understanding of human behavior in organized activity, whether at the level of whole organizations, or groups, or individuals. The general aspects of this problem concern 1) communication and understanding between individuals, between individuals and groups, and between groups under different conditions and varying relationships, 2) the securing of action and cooperation under different conditions and in varying formal organizations, and 3) the maintaining of individual and organizational equilibrium through change. Under all these circumstances, researchers investigating the broad industrial relations field must pick their way carefully so as to avoid the twin pitfalls of attempting "too little, too late" and of expecting "too much, too soon."

[Note: An illustrative case on industrial relations, entitled "A Strike at Electronics Park, September 1950," is presented in Case Section B.]

[23] See Sumner H. Slichter, *Union Policies and Industrial Management*, Chapter 19. Washington: The Brookings Institution, 1941.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	192–197	What insights did the Western Electric "Hawthorne studies" afford to researchers desiring to advance the human relations phase of the personnel movement?
2	192–197	In your opinion, did the rather complete abandonment of the *a priori* objectives of the fatigue studies in favor of the social interrelations studies represent a net loss or net gain for scientific research?
3	192–197 & Chapter 6	Paralleling the Hawthorne findings, outline the system of sentiments that serves both to differentiate and to integrate Grace Stolski, Sam Reddick, Tom McCarthy, John Evans, and Walter Baker within G.E.'s Electronics Park organization.
4	192–197	Illustrate some possible ramifications of changes in technical and formal organization upon the social organization of a firm.
5	192–197	Will a weekly newsletter dictated by the company president ensure adequate communication within a firm? Discuss the scope and ramifications of the problem of communication within an industrial organization.
6	198–202	Identify the three major parties at interest in labor-management relations and briefly characterize their respective interests.
7	198–202	In your opinion, should labor-policy decisions by G.E., Ford, General Motors, and other large firms "be guided in large measure by considerations of profit and loss for the individual firm" or "by the realization that workers are essential . . . fully as much as are stockholders"? Can you reconcile these two statements?
8	202–210 & Chapters 6 & 7	What preliminary investigations would you undertake before prescribing a personnel-relations program for G.E.'s Electronics Park plant?
9	202–210 & Chapters 6 & 7	What personnel-relations functions would you tentatively plan to include in the G.E. program, subject to the outcome of preliminary investigations as per question 8?
10	202–210	Should the personnel-relations department organization chart be basically the same in all of G.E.'s hundred-odd industrial plants? Discuss.
11	202–210	In a typical case instance, may a firm that has installed an acceptable merit-rating system and a well-liked incentive wage-payment plan thereby profitably refrain from incurring the expense of setting up and operating a job-evaluation program as well?
12	192–210	How do you account for the fact that "the issue of unionism itself—that is, whether or not employees may organize collectively and be recognized by the employer as a bargaining group—has progressively become less and less of an issue during recent years"?
13	209–210	In your opinion, how would a random group of 25 employees compare with 25 G.E. Electronics Park executives and 25 Local 320, I.U.E. (C.I.O.) union officials in ability to predict which morale determinants the 11,000 Park employees would select as "most important"?
14	211–212	Graph your conception of a typical labor-supply curve over the course of the business cycle in time of peace. In your opinion, how might the total size, the composition, and the broad occupational classifica-

QUESTION NO.	PAGE REFERENCE	QUESTION
		tion of the labor force shift if the nation's economy moved from a high-volume peacetime status to a full-fledged, war-production status?
15	212	In your opinion, do sound personnel-relations programs tend to make a firm's labor force more or less mobile? Explain.
16	212–213	Would you favor or oppose a system of government-administered lump-sum payments to workers who are displaced by technological change, a) if the purpose were to win more ready acceptance by workers of technological improvements? b) if the purpose were to reduce the rate of technological change for the economy as a whole?
17	212–214	What relationship do you see between labor productivity and the wage policy followed by management? Use illustrations where appropriate.
18	214–218	To what extent are the interests of labor and management "basically the same" and in what ways are each group's interests "fundamentally different"?
19	214–218	"In the normal peacetime economy, an occasional strike or lockout is a 'good thing' for sound labor-management relations." Explain and evaluate this statement.
20	214–218	May the existence of a non-union segment of an industry tend to make for "industrial peace," as well as for battles centering upon union recognition?
21	Case Section B	Analyze the G.E. Electronics Park labor situation as of 1950, and answer questions 1–10 listed in the opening paragraph of the case in Case Section B.



12 Elements of Distribution: The Marketing Process

*WHEN SEEN IN BROAD PERSPEC-*tive, ascendancy in business affairs appears to have shifted back and forth over decades and centuries between production and marketing. The circumstances surrounding each shift have been very different in nature, however, for the course of business history has not stood still.

First, taking centuries as our frame of reference, we may note that in primitive society man produced articles used for food, clothing, and shelter from materials found close at hand. Shortages were more typical than surpluses, so production, rather than marketing, became the dominant objective of work. As civilization grew richer along material lines, increasing emphasis was apt to be placed upon exchange of goods and services originating from more and more distant points. Witness the commerce that flourished in Venice during its heyday in the Middle Ages. The Venetian fleet brought silks and spices from the Near East. These new wonders did much to arouse Western Europe from the thousand years of relative lethargy that marked the "dark ages." Although production continued to be small and local in scope, mercantile capitalists spread their interests and their activities over increasingly larger areas of the earth.

A fundamental reversal of the trend came in the late 18th and in the 19th centuries with the advent of the Industrial Revolution. Production came back into its own with the discovery of mechanical methods for application of power and with the displacement of hand labor by power-driven machines. Marketing, too, expanded vastly in scope, but the dynamic force characterizing the Industrial Revolution was the phenomenal expansion of industry through use of new production techniques.

During the present century, improvement in transportation and communication have made *possible*, and continued growth of industrial production has made *necessary*, the development of vast, world-wide, national, and regional markets in the United States and elsewhere. The business of marketing has again come into its own. As the efficient unit for factory and for crop production has grown larger and larger, the necessary area for efficient product distribution has increased in rough proportion On both the production and the marketing sides, this process fits the pattern of what economists

Photograph at top of page: Physical layout ideas are subject to the influence of "change and progress." Macy's Department Store in the mid-20th century is known for leadership in the merchandising field. (*Macy's*)

call division or specialization of labor. For instance, regions that could best turn out cotton or corn crops tended to do so at the cost of more balanced production. Regions that could best turn out iron and steel or industrial products focused their energies upon these activities. Each region, thereby, became increasingly dependent upon other regions not only to supply its deficiencies, but to absorb its surpluses as well. Upon such conditions, the modern concept of marketing is predicated.

Next, using mere decades as our frame of reference, we may note shorter-run shifts in emphasis back and forth between production and marketing, centering around the business cycle and the war-peace cycle. Experience has shown that these two cyclical phenomena are themselves not unrelated. The great Civil War fought in the United States from 1861 to 1865 proved to be an accelerating factor in the spread of the factory system of production. The panics of 1873 and 1893 brought full-fledged business depressions of a severity unknown in pre-industrial days. The stimulus to production provided by the war with Spain in 1898 enabled the United States to enter the 20th century upon an optimistic note.

The development of broad national markets for our rapidly expanding productive plant was a task that occupied many of our foremost business leaders during the first decade and a half of the present century. Firms concentrating too narrowly upon mere volume of output soon found themselves faced with knotty marketing problems. The astounding growth rate of demand in the over-all economy, which had built up during this period, and the further step-up in demand, which accompanied World War I from 1914 through 1918, led to a renewed ascendancy for problems of production over problems of distribution during the latter half of the second decade.

After an unsteady start during 1920 and 1921, the decade of the '20's developed in a pattern that at last brought American marketing into its own. Although the lot of the American farmer competing in the world market left something to be desired, the situation of the American businessman in both domestic and foreign markets gave satisfaction in many quarters. It was not the businessman alone who prospered. Wage earners and investors enjoyed rising standards of living as the national market strained to absorb the swelling output of American factories. The stock market crash of October 1929 wrote a finis to the "New Era" of the '20's and ushered in the Great Depression of the '30's. Marketing was, of course, still the more crucial factor in business affairs during this period. The importance attached to pricing policy, merchandising policy, and efficiency in the distribution process increased notably.

During World War II, American business regained much of the prestige and respect lost during the course of the Great Depression. The production miracle performed during the first half of the '40's gave us the wherewithal to crush the Axis powers. Surprisingly enough, production found but little occasion to yield the stage to marketing for the balance of the '40's. The widely predicted postwar economic slump failed to materialize as production and marketing together kept the American economy producing effectively in high gear. The national emergency, which accompanied the Korean crisis during the early 1950's, brought on a new "guns and butter" economy. Production was ascendant but relied upon normal marketing processes to help keep the mixed "war and peace" economy on an even keel. In the postemergency year "195x," marketing may again become senior partner in the operation of the production-distribution cycle.

ACTIVITIES IN MARKETING

Many are apt to regard marketing in a narrow sense, as though it were restricted to the act of selling goods to the consumer. The sale itself is of vital importance, of course. Yet, in an over-all sense, it is merely the end result of a long series of marketing steps. Moreover, the process of moving

goods from their points of origin to the places where they are to be consumed usually involves a number of intermediate sales not directly related to consumption. It is important that we attempt to visualize the marketing process in its full compexity.

In our effort to describe marketing, let us approach the subject successively in terms of 1) functions performed, 2) the persons who perform these functions, 3) types of goods and services involved, and 4) techniques used in performing the functions.

1. Marketing functions. The marketing process begins when raw materials leave the farm, mine, forest, or other point of origin. These materials are typically a) purchased by a processing firm or by a middleman acting for such a firm, who b) assembles a supply from numerous sources. Assembled goods are c) graded and sorted, if necessary, and d) transported to a plant for processing or to a market for sale to consumers. At various points in the marketing process, goods may be e) placed in storage. The marketing agent who purchases such goods in advance of sale to the consumer must f) finance his inventory or else have it financed by others through delayed payments or other credit. The person who holds title to marketable goods over a period of time g) assumes a risk of loss through changes in such variables as price and style, or through physical spoilage, theft, fire, or other damage. Some risks are insurable or transferrable to others. Yet many risks of loss must be assumed by those marketing organizations that are in the field through hope of gain. A little-recognized marketing function is that of h) supplying information about goods and services to potential users. Only recently, for instance, have advertising men begun adequately to advertise the function of advertising itself to the general public. The i) selling function centers around the transfer of title to goods, but includes all activities connected with the process of making a sale.

2. Persons performing marketing functions.

a. The consumer. Far and away the most important group of persons performing marketing functions in America are the 150-odd million of us who serve day in and day out as ultimate consumers. We are the reason why marketing exists in the first place. Our relative numbers, geographical location, tastes and preferences, willingness and ability to buy, and buying habits set the framework within which the American market functions. We are poorly organized when judged by standards set up for less inclusive groups among us. We tend to quarrel endlessly among ourselves over questions involving our ultimate aims and objectives. In a real sense, nevertheless, we exercise "consumer sovereignty" within the market place. Manufacturers who serve us build up large staffs of market-research analysts for the express purpose of checking what we "should" want against the superior test of what we actually *do* want. It is ultimate consumers who make and break markets and the firms operating within them.

b. The retailer. Marketing men who set up in business to deal directly with the ultimate consumer are known as retailers. Nearly two million retail establishments were in operation in the United States at midcentury.[1] Approximately 7 million persons were engaged in retail trade, either as employees or as proprietors. The different types of stores differ significantly in volume of average annual business per store. For instance, whereas grocery stores approximate the national retail average with sales of less than $100,000 annually, department and general merchandise stores sell nearly four times the average for all categories.

Although we have already listed functions usually performed during the normal marketing process, it will be useful to re-

[1] Hugh E. Agnew, Harold A. Conner, and William L. Doremus, *Outlines of Marketing*, page 68 New York: McGraw-Hill Book Company, 1950.

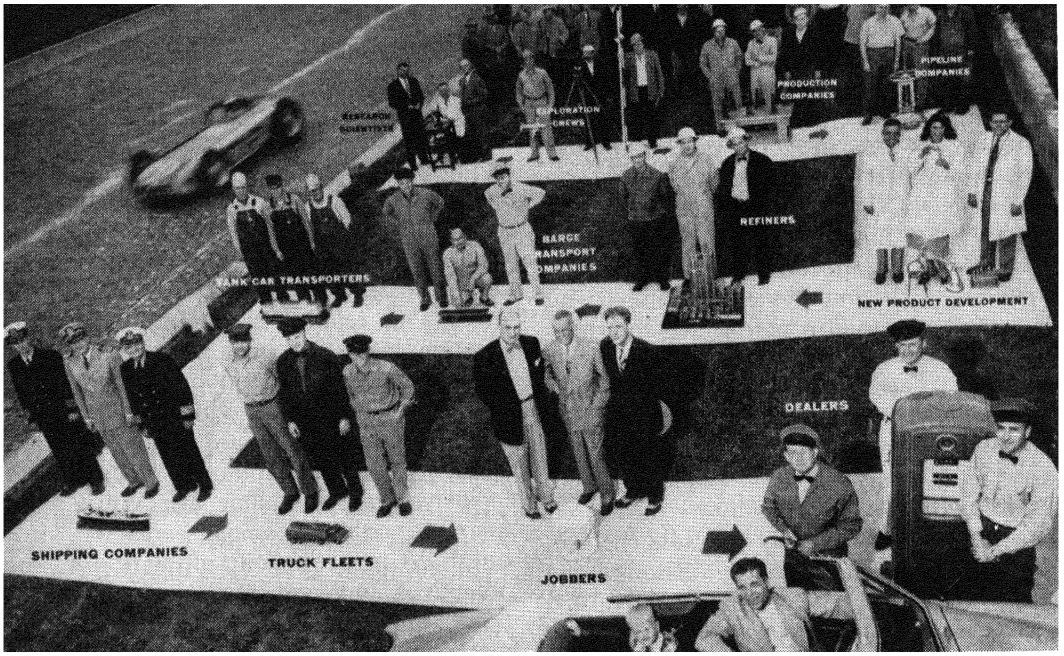


Figure 12–2: Twelve major steps in the gasoline marketing process. (*American Petroleum Institute*)

state some of these items in terms of functions of the typical retailer, as follows:

1) The retailer acts as buying agent for his customers, exercising informed judgment in the selection of goods to be stocked.

2) He assembles goods transported to his store from various wholesale establishments. As part of this service, he buys in wholesale quantities and breaks items up into family portions.

3) He operates a conveniently located store in which products are warehoused until customers purchase them from the shelves.

4) The retailer provides a goodly part of the capital needed to equip a store and finance operations. In certain transactions, he accepts credit from the wholesaler. In other transactions, the retailer himself provides credit for his own customers.

5) He assumes the risk of loss through changes in price and style, through theft, damage, and spoilage, and through bad credit accounts.

6) The retailer exhibits goods for customer inspection, and performs other services associated with actual sales. One of these important services may be the retailer's willingness to stand behind the merchandise he sells.

We shall investigate some of the problems and opportunities to be found in the field of retailing at a later point in this chapter.

c. The wholesaler. Marketing men who occupy a position midway between the retailer and the producer or manufacturer of a commodity are known as wholesalers. Approximately a quarter of a million wholesale establishments were active in the United States at midcentury. In contrast to retail establishments, which are scattered through towns and villages in rough proportion to the population itself, wholesale concerns tend to center primarily in metropolitan centers. In these cities, large numbers of retail firms and industrial firms, which purchase at wholesale outlets, are close at hand, and the transportation facilities for assembly and distribution of goods are especially good. With the improvement in highways and the tremendous growth in

truck and automobile transportation during recent decades, the number of wholesalers operating out of smaller cities has increased notably, although the metropolitan concentration is still quite high.

The millions upon millions of distinct products and parts produced in our economy customarily pass through wholesale channels before reaching the retail trade and the ultimate consumers. The sum of wholesale operations adds up to about the same product quantities and product "mix" as does the sum of retail operations. Types of wholesalers to be found in many fields differ significantly from types of retailers operating in these fields. The range of products handled by particular types of wholesalers in particular fields of marketing may be broader or narrower than that of the particular retailers whom the wholesalers set out to serve.[2]

Marketing functions performed by many wholesalers frequently include the following items:

1) The wholesaler acts as buying agent for his retailer customers, often employing as buyers specialists who are in a position to advise producers regarding production methods and future product trends.

2) The wholesaler also acts as selling agent for manufacturers whose merchandise he moves to retail stores. By representing many manufacturers in sales contacts with thousands upon thousands of scattered retail stores, wholesalers are able to undertake efficiently a selling task that would usually prove exorbitant in cost for an individual manufacturer were he to attempt to "go it alone."

3) The wholesaler assembles supplies of goods, generally in economic carload lots, and breaks units up into convenient size to meet retailer needs. Economies in transportation and storage accrue to manufacturers and to retailers, as well as to wholesalers, because of the presence of middlemen in the marketing stream.

4) By reason of his middle position in the marketing process, the wholesaler plays an important role in transmitting market information both "up the ladder" from retailers to manufacturers and "down the ladder" from manufacturers to retailers. The wholesaler's buyers and salesmen both play important roles in this communication process.

5) We have noted that the ready accessibility of the wholesaler's stocks of goods enables retailers to minimize their own inventories. The wholesaler performs a further valuable function for the retailer by extending credit to him for periods up to three months in duration. During this time, the retailer hopes to convert this merchandise into cash and repay the wholesaler out of income received from consumers. The wholesaler, who sells many hundreds of items to a typical retail account, is in a much better position to offer this financing service economically than is the manufacturer who sells only a limited number of products to thousands upon thousands of scattered retail establishments.

6) Through ownership of large stocks of merchandise, the wholesaler assumes the risk of loss through change in value or through physical deterioration. He also assumes a credit risk in his financial dealings with marginal retail businessmen.

We shall return to a consideration of wholesaler problems and activities at a later point in this chapter.

d. The manufacturer's sales manager. A marketing man who handles the distribution problems of manufacturers carries out the duties, and frequently has the title, of sales manager. Every firm, which may follow alternative courses of action in the distribution of its products and which may engage personnel to serve its distribution needs, has a place in its organization for a sales manager. In smaller firms, the sales manager may perform duties in other fields, such as personnel or finance, as well. Indeed, he may be a general manager who undertakes all business functions as part of a single job.

Marketing functions performed by the sales manager normally include the following items:

1) The sales manager relates marketing decisions to other phases of a manufacturer's

[2] *Ibid.*, page 138, and Theodore N. Beckman and Nathanael H. Engle, *Wholesaling: Principles and Practice,* page 119. New York: The Ronald Press Company, 1947.

bly tends to rise. Agencies of the Federal, state, and local governments, private institutions, trade associations, specialized business publications, and commercial-research agencies all contribute their bit to the sum total of timely and helpful information available within the marketing field.

b. Conducting market research.[3] Much of the information flowing to the sales manager from outside sources is not in a form directly useful for the problem at issue in that particular firm. Nevertheless, if these outside data are reworked into the form desired by the individual firm and supplemented by investigations conducted either for or by the firm, the end result is often a market-research study that will prove directly helpful to company executives in the decision-making process. Busy executives of firms of even moderate size find it profitable to develop market research organizations for the purposes outlined above.

Market research may 1) keep top management informed on the extent to which the company's products are meeting customer needs and desires, 2) measure the size of and the trend of the market within which each company product competes, 3) apprise management of the nature of and characteristics of the company's competition in various product lines, 4) furnish data enabling executives to arrive at informed judgments on pricing policy, 5) determine the company's "fair share" of the market for each product in light of present and anticipated market conditions, 6) analyze the results of company activity along sales lines to date, 7) test methods that management proposes to use to improve the company's position within each market served, 8) contribute fresh ideas for use by marketing men in their efforts to improve company sales, 9) chart the actual state of the market and the position of major market forces at any given time, and 10) undertake special research projects desired by top management immediately upon demand.[4]

c. Advertising. Advertising has been defined as "any paid form of nonpersonal presentation of goods or services."[5] It is grouped with sales promotion and with personal selling as one of three major methods used for demand creation. All three devices have as their fundamental aim the encouragement of purchases of specific goods and services. In actual practice, the three methods are not strictly alternative. They are most effectively combined in an integrated program in which each supplements the others.

Advertising is used to present a message or idea forcefully to large numbers of people. As great numbers of advertising campaigns are constantly competing for the attention of the mass audience, individual messages and individual campaigns must be carefully planned and skillfully executed if they are to have the effect their sponsors desire. Advertising is normally used as the advance agent in a selling campaign. It is designed to acquaint the prospect with the existence and the advantages of a particular product or service. Successful accomplishment of this preliminary mission will make the task of the salesman immeasurably easier. Easing the salesman's task will tend to reduce the unit cost of selling and increase the volume of sales. Increased volume tends to reduce unit production and administrative costs as well. Thus, there shapes up the possibility that advertising may constitute an economical method of creating demand and of reducing the unit cost of goods sold. Like many other techniques of business administration, advertising has its uses and abuses. Let us pursue a bit further questions as to the why and how of advertising.

There is no automatic reward for build-

[3] For a comprehensive treatment of market research techniques and major applications, see David J. Luck and Hugh G. Wales, *Marketing Research*, New York: Prentice-Hall, Inc., 1952.

[4] See Agnew, *et al.*, *op. cit.*, pages 298–299.

[5] Ralph S. Alexander, Frank M. Surface, Robert F. Elder, and Wroe Alderson, *Marketing*, page 467. New York: Ginn and Company, 1940.

ing a better mousetrap. The feat is accomplished almost every day. A manufacturer must take positive steps to impress upon the consciousness of a mildly indifferent public that he has improved mousetrap design in a fairly significant way. Specifying the details of this achievement does not in itself bring forth remuneration. The manufacturer must make the further point that he is willing, indeed anxious, to share the product of his labors with other citizen mousetrappers on fair and equitable terms. He must also publicize a time and place at which the exchange of values may take place. If this outlined advertising campaign is, in fact, executed with imagination and with verve, the manufacturer will bank money while customers contentedly bait mousetraps.

Producers of goods and services wish to have customers see the advantages of their wares and to know that they offer them. Advertising informs and educates potential customers in a manner designed to stimulate their desire to buy. Broad-scale advertising is more typically designed to build future markets than to sell specific quantities of goods today. Advertising can serve both of these needs, of course. It may present new products, remind customers of known values, and explain to consumers how goods and services may be effectively used.

Advertising campaigns are of interest to middlemen in the marketing process, as well as to ultimate consumers. National advertising is especially effective in leading marketing men, such as wholesalers and retailers, to decide that a particular manufacturer's products constitute a good line to carry. The return per unit of sales effort goes up to the extent that advertising effectively accomplishes a presale job.

Manufacturers are anxious to have their goods reach consumers in today's competitive markets with the least possible distribution cost necessary to be incorporated in the price that the traffic will bear. Advertising is calculated to improve a manufacturer's price-cost relationship in the same manner as is any other activity engaged in by the business organization. Yet, as indicated earlier in this section, successful advertising may open up a mass market, thereby decreasing the unit cost of selling and, frequently more important, spreading production costs and overhead costs over a far greater number of units sold.

Advertising may be of value to manufacturers in many secondary ways as well. It can help to level out peaks and troughs in the sales curve, thereby reducing the severity of many production and personnel problems typically associated with uneven sales. Advertising also helps to place before the public a firm's name, products, and good performances. In many instances, a firm's prestige can be so enhanced by advertising that it can borrow money or float securities on unusually favorable terms.

Effective advertising characteristically gears in with some basic psychological drives known to be present in the makeup of most individuals in our current culture. We tend to react strongly to matters dealing with 1) life and health, 2) our relations with others, and 3) some mysteries of our existence. The businessman's desire to win our respect and merit our continued patronage over the long run is frequently as effective as restraints imposed by the Federal Trade Commission in leading him to refrain from use of "psychological warfare" methods in advertising campaigns.

Numerous media are open to the producer who wishes to conduct an advertising campaign. 1) Particular newspapers, for instance, provide mass circulation in specific local areas, which may be of special interest to the advertiser. 2) Magazines tend to circulate nationally and are kept in the home for a longer period before being discarded. 3) Radio replaces the printed word with the warmth of the human voice and other audio effects. 4) TV combines audio and video impulses in a fashion that increases severalfold the impact of advertising messages, as compared with audio or visual alone.

Many other advertising media may be

cited. 5) Motion pictures can be used to convey messages in much the same manner as TV, although they suffer the handicap of not being able to gain entrance to the home. 6) Motorists are familiar with the influence of large billboards in placing advertising messages before the public. 7) Commuters have had long experience with car cards in busses and subway cars. Even 8) sky-writing and 9) sound trucks may be used to drive advertising messages home. 10) Direct-mail advertising, based upon selective lists of potential customers, constitutes an important medium for the promotion of sales. Circular letters, folders, and catalogues may be delivered to the home in this fashion.

One of the major problems confronting advertisers is that of deciding what appeals to use in messages and what media to use in bringing these messages to the attention of the public. As advertising is carried on most effectively in campaigns, rather than in isolated announcements, advertisers are faced with a series of related decisions. An integrated approach is essential if the advertiser is to secure the greatest possible return for his advertising dollar. Individual advertisers need not arrive at these important decisions entirely on their own. Specialized advertising agencies, which make a business out of the conduct of such campaigns, now dominate the advertising field. We shall observe their activities at some length in Case Section C.

d. Selling. Salesmanship has come into its own during the 20th century as a new and useful technique in the conduct of business affairs. In a well-run business, pretested sales campaigns are used to bring goods and services to the attention of potential customers. In many instances, salesmen actually teach customers how to use the firm's products to best advantage. During the course of the sales presentation, occasion is taken to convince the potential customer of the advantages of owning the item being sold.

A countertrend has also developed in certain types of markets in which the buyer actually seeks out the seller. This situation is particularly common in the field of retailing. The clerk in a 5-and-10 cent store, for instance, devotes her time almost exclusively to tasks of making change and wrapping packages. The inexpensive items displayed upon the counter are expected to sell themselves in good part.

Other types of selling activities cover the whole range between these two examples. Wholesalers' salesmen, for instance, are little more than order-takers with reference to any particular item in a given manufacturer's line. Nevertheless, they are frequently called upon to help retailer customers with respect to general business problems related to selling. These problems include such topics as advertising, display of merchandise, purchasing, credits, and record-keeping. Salesmen should be intelligent businessmen. They should be able to talk with customers about their own needs in analytical terms. Yet, above all, a qualified salesman should be able to analyze his own product correctly and to compare it, point by point, with other products in the same general field.

Salesmen should know human beings and their traits. Often, products are nearly equal in quality, and price and service aspects are very much the same. In such an event, a sale will hinge upon the attractiveness of the salesman's personality. A firm cannot long substitute personality for basic soundness, although individual executives may well develop more of the former to bolster the latter if they are to succeed in getting ahead.

Personal selling techniques permit salesmen to engage the prospect's attention for relatively long periods of time. During this period, the salesman has opportunity to try out varying sales approaches. Yet, for this reason, personal selling itself constitutes a most expensive method of contacting the individual prospect. Moreover, when salesswork is carried out on any sizeable scale, the selling program presents difficult prob-

lems involving the management of a human organization.

The sales manager, also, should know human beings and their traits fully as well as his salesmen. He must analyze his own men correctly and appraise their potential. He has the task of selecting and training qualified personnel. In most instances, the competent sales manager undertakes to route, schedule, and control, and, when necessary, motivate his sales force as well.

In developing a market for the firm's merchandise, the sales manager considers the point of view of potential middlemen, as well as of the manufacturer and the ultimate consumer. A product must offer the wholesaler and the retailer the prospect of 1) a satisfactory volume, at 2) an attractive margin relative to the risks and costs involved. Also, 3) the quality of the product should be such as to reflect credit on the middleman handling the item. These three items cannot be considered in the absolute. The proposed new item must be 4) considered in relation to other items, which form the seller's stock in trade.

If the sales policies of the manufacturing firm have been correctly conceived, the individuals to be "sold" presumably stand to gain by dealing with the firm. Nevertheless, an important sales job remains to be done in each individual case. The company salesman has the task of convincing the potential customer—be he wholesaler, retailer, or ultimate consumer—that he would be making the right decision if he chose to deal with the salesman's firm. In order to present a convincing case, the salesman must know his prospect's individual needs and must relate these needs to services that can be performed well by his firm. A good salesman deals in goods *and* services in a very personal way. Some of these sales services and sales ideas are considered in the sections entitled "sales promotion" and "merchandising."

e. Sales promotion. Numerous controversies have raged in marketing circles during the past several decades concerning the rightful places of salesmanship, sales promotion, advertising, and merchandising, both as topics in marketing literature and as sections within marketing departments. These issues need not be debated in our general business text. Nevertheless, it is fitting that we consider some of the *activities* frequently carried on by persons whose prime interest tends to fall within each of these four important aspects of marketing. We need not be unduly concerned if a certain amount of overlap creeps into the presentation. A great deal of overlap and a great many conflicting definitions may be found within these evolving subject fields in actual practice.

Professors Agnew, Conner, and Doremus of New York University, while conceding that the problem of defining sales promotion is especially difficult, express their belief that "a much more clear-cut conception of sales promotion is possible if it is considered as dealing with ideas about goods and services, in much the same way as do salesmanship and advertising, and as an extension of these two activities, on a coequal level." [6] They suggest three main areas as a "workable field of responsibility for the sales-promotion manager," as follows:

1. Working with middlemen on ideas to increase sales.
2. Working with ideas to stimulate consumer interest, other than advertising and merchandising.
3. Working with sales, advertising, and merchandising departments to increase their effectiveness.[7]

We shall consider these sales-promotion areas from the point of view of the manufacturer in our highly condensed treatment, for the manufacturer's range of activities encompasses those of the wholesaler and the retailer, as well as of his own salesmen.[8]

[6] Agnew, *et al., op. cit.*, page 367.

[7] *Ibid.*

[8] For a comprehensive treatment of this subject, see Kenneth S. Howard, *Methods of Sales Promotion.* New York: McGraw-Hill Book Company, Incorporated, 1940.

1) *Working with middlemen:* The manufacturer who plans to undertake sales-promotional work with wholesalers and retailers handling his product line is well advised to start by endeavoring to project himself into the role of these independent middlemen. The sincere objective of the manufacturer in this instance should be to increase the profitability of the middleman's operation and the satisfaction the middleman derives from his role as an outlet for the manufacturer's product line. Moreover, the manufacturer must convince the middleman, as well as his own organization, of the validity of this point of view.

Of course, the manufacturer wishes to have the middleman obtain this measure of wealth, health, and happiness through close cooperation with *his* own firm in preference to numerous competitors. His job is to "sell" the middleman on the advantages of nurturing a mutually profitable relationship. Strong points that the manufacturer will desire to point out are a) the demand for his product, b) the margin available to the middleman, c) the strength of the manufacturer's advertising program, d) the attractiveness of his merchandising approach, and e) the helpful nature of his sales-promotion ideas and devices.

Some specific sales-promotion activities that manufacturers' salesmen frequently undertake with middlemen may be listed as follows:

a) Attractive display of the manufacturer's products through use of display racks or other mechanical aids for novel arrangement of the merchandise.

b) Point-of-purchase advertising of the product line through use of signs, posters, pamphlets, and other giveaway materials.

c) Assistance in local advertising efforts (1) through provision of advertising copy, mats, and cuts, (2) through suggestions as to media, scope, and timing, and (3) through the sharing of advertising costs.

d) Communication with middlemen via mail in the form of company newsletters, catalogues, pamphlets, and other sales literature.

e) Convening of regional meetings for middlemen for the purpose of displaying the firm's new product line, explaining company plans and policies, and "selling" the middlemen on the program being pushed by the firm.

f) Demonstration of the product in the dealer's individual store, including the distribution of samples when appropriate, so as to induce the consumer to try the product being featured at an earlier date than would be the case if reliance were placed upon advertising alone.

g) Assistance in broader matters involving business judgment, such as credit policy, store layout, or inventory policy, in instances in which such advice is desired.

h) Numerous other sales-promotion devices, such as premiums, contests, and combination product sales, may also be used to stimulate purchases by the middleman's customers.

No individual manufacturer can afford to use all of the above sales-promotion devices at one time. It is the right combination, under specific case circumstances, that brings favorable results. Each manufacturer who deals with a particular middleman should ascertain, insofar as possible, what other manufacturers are doing or propose to do to aid that middleman. In this instance, it is not a matter of meeting the competition head on. Receipt of a half dozen identical offers of aid would undoubtedly irritate the middleman. A manufacturer might strive to outdo the opposition in terms of the attractiveness and originality of his aids. He should take care, however, to develop a flexible group of aids that will prove genuinely useful to the various types of middlemen handling his product line.

2) *Working with consumers:* Our main interest in this field will be to distinguish between the sphere of the sales-promotion manager and those of the advertising and sales managers. Both the advertising manager and the sales-promotion manager endeavor to stimulate consumer purchases through use of written messages and visual aids. In practice, a program that is relatively regular and continuous and utilizes standard advertising media to bring the firm and its product line to the attention of the consumer comes under the jurisdiction of the advertising manager. A sales stimula-

tion program relatively limited in duration and relatively specialized in objectives sought may be placed under the jurisdiction of the sales-promotion manager. Examples of sales-promotion activities undertaken to stimulate the consumer include premium plans, contests, demonstrations, sample distributions, and direct-mail releases.

3) *Working with related departments:* The sales-promotion manager's program will enjoy maximum effectiveness only if it is tied closely to related activities carried on by the sales manager, the advertising manager, and the merchandising manager. The sales-promotion staff plays an important role in the training of sales personnel in the "promotional" aspects of selling. It also performs an important task by communicating ideas, plans, and "tips" or "leads" to salesmen in the field. The sales-promotion staff may also undertake to orient salesmen with respect to effective methods of utilizing advertising and merchandising ideas.

f. Merchandising. The same upsweep in productivity that has heightened the need for effective salesmanship, sales promotion, and advertising has brought the merchandising function into its own as well. The accelerated pace of change, both in products and in marketing conditions, that we have experienced since World War I and the continual widening of the field of consumer choice among competing products have increased the risks of modern marketing. A considerable premium is thereby placed upon "marketing the right merchandise or service at the right place, at the right time, in the right quantities, and at the right price." [9] The planning of these conditions for profitable marketing constitutes the very definition of merchandising, according to the American Marketing Association Committee on Definitions. Some of the key activities generally carried out by merchandise managers may be listed as follows: [10]

1) *Product-planning* is a merchandising function in the sense that merchandising men are instrumental in selecting a specific product line from among a wide range of possible items. They keep customer wants and habits, as determined by market research, in mind, as well as numerous other factors, including the probable activities of competitors. In selecting materials, setting design, and fixing allowable manufacturing costs, merchandising men work closely with production men and design engineers. Style considerations are of great importance in many lines of merchandising. The timing of activities is often a prime determinant of success or failure for what is, in the abstract, a sound idea. The importance of correct pricing of products for optimum volume and profit may readily be appreciated. Interlocking with the pricing problem is the problem of adjusting volume of production to the ability of the market to absorb the firm's output at a price that will yield a satisfactory profit.

2) *Diversification* is a second merchandising function of major importance. The objective of the merchandise man in this area is to keep in step with an ever-changing consumer demand for his products. Here again market research often serves as eyes and ears for merchandise planners within the firm. The merchandise man wishes to satisfy the wants of both the consumer and the middleman. He wishes to satisfy these wants not only initially, but, also, consistently as wants and habits shift over periods of time. Changing products in harmony with changes in the nature of demand is no simple problem when this demand involves such near intangibles as quality, service, color, price, size, and packaging. Merchandise men diversify their product line by taking one or more of the following four actions:

a) Add a new product to meet a newly expressed demand.

[9] "Report of the Definitions Committee," American Marketing Association, page 211, *Journal of Marketing*, Vol. XIII, No. 2. October 1948.

[10] For a comprehensive treatment of this subject, see Alexander, *et al.*, *op. cit.*, pages 115–132.

b) Change an existing product in such fashion as to adapt to changes in market requirements, as, for instance, through modification in design.
c) Develop new uses for an existing product in addition to the customary ones.
d) Redesign an existing product so that it is different in appearance even though it is functionally the same.

3) *Simplification* is a third major merchandising function. Many firms experience difficulty in drawing the fine division line between carrying a full product line, including low turnover items for customer convenience, and retaining an excessive number of outmoded items in the name of completeness. Merchandise men customarily ask themselves from time to time the reason why some items are slow moving. Do they really represent odd-size items that give the firm a reputation for service? Are they, perhaps, items that changes in customer taste and technical progress have made obsolete?

A firm that values its reputation as a supplier of a complete line may economize, in some degree, by simplification in optional items, while still offering a full line in terms of necessities. A firm may also combine some advantages of diversification and simplification a) by stocking semifabricated subassemblies instead of finished parts or b) by developing interchangeable component parts for a number of related items.

4) A fourth merchandising function that has grown rapidly in degree of recognition during recent years is that of *packaging the product*. The utility, style, attractiveness, and safety features of the package in many cases rival in importance those same features of the product itself, in the eyes of many customers. The manufacturer must also decide the correct number of pieces of a product to place in the carton that he wishes the middlemen to sell to the individual customer. In deciding for or against the proposed adoption of a particular package or container, the merchandise man also keeps in mind factors of relative cost and of adaptability of suggested items to feasible production processes.

Although the list of merchandising functions is far from exhausted, we shall turn to a consideration of problems of organizing personnel for fulfillment of the broad merchandising function within a firm. Merchandising is rarely a one-man job in firms of any considerable size. Prime administrative responsibility both is and should be given to one man in most situations, but interdepartmental committees are very commonly set up to aid in the over-all task. Such a committee often includes the cost accountant, the product-design engineer, the purchasing agent, and the market-research head, in addition to the production and sales managers and the merchandising manager himself.

The merchandising manager frequently has occasion to advise other departments within the firm as to problems of joint interest, just as they advise the merchandising manager. Stimulation of a 2-way flow is beneficial for all parties in this multilateral exchange.

CURRENT DEVELOPMENTS IN MARKETING FIELDS

A question is frequently raised as to whether marketing costs are "reasonable." As marketing is an integral—and not an optional—part of the economic process of producing goods and services, the answer would have to be "yes" if man could not find ways of reducing existing marketing costs. It profits little to term unavoidable costs "unreasonable." Yet marketing is no more perfected than is production or any other form of human endeavor. We constantly find better ways to market the better mousetrap once we have built it. What is reasonable today we might, with justification, term unreasonable tomorrow, were it to stand astride the uplifting stream of change and progress and refuse to give way to improvement. In order to gain some idea of where we stand today in marketing, let us view some of its main currents. We shall

start with retailing first, as ultimate consumers looking backwards through the marketing process.

1. RETAILING

The retailing business traces back through the pages of history to the pioneer days of civilization, both in North America and in other continents. Although particular establishments have taken myriad forms, the basic function performed remains that of buying and selling goods and services as part of the distribution process. Problems confronting retailers, though in one sense recurrent, fit into a mosaic as complex, in many respects, as the over-all structure of the retailing business itself.[11]

In America, the primitive barter practices engaged in both by natives and by European settlers were superseded through the establishment of organized trading posts. The trading post was essentially a general retail store. It may still be found today in certain pioneer regions.

As conditions became more settled, the trading post was superseded as the predominant mode of retailing by two divergent types of business activity. A great many itinerant peddlers traveled about from community to community selling a wide variety of small items to families in their homes. These peddlers also doubled in many instances for the modern news commentator, keeping isolated settlers abreast with developments in the world at large. While peddlers vending small items sought out settlers in their homes, general stores began to spring up in villages to take care of the total needs of households. Many settlers undertook to travel long distances on shopping expeditions to population centers. These general stores had the same ambitious stock coverage as do modern department stores, but they made no effort to operate under a departmental form of organization. Small general stores still exist today in certain outlying communities, although modern transportation facilities continually reduce their prospects of survival in competition with city stores.

The general store was confronted with competition from two new types of retail establishments during the Civil War period. In large centers of population throughout the country, new departmentalized stores emerged, offering customers specialized services that general stores could not hope to match. Moreover, these large department stores were able to employ the services of specialized personnel in each department of the enterprise. Superior personnel and increased use of business-accounting and -control practices yielded a strong competitive advantage to department stores during this period. Two large mail-order establishments also made inroads into the sphere of the general store. Through use of elaborate catalogues, these firms enabled rural and small-town inhabitants to select merchandise that would meet their specifications without traveling to an urban center. Subsequently these mail-order firms established retail outlets of their own in scores of cities throughout the nation.

Near the close of the 19th century, as the size of business units, in general, increased notably, the chain-store movement began to spread in the retailing field. These chain stores sought to obtain advantages from large-scale, centralized purchasing and high-caliber, specialized management. The costs of management activities remained unusually low on a unit basis, because of the great number of stores over which these costs could be spread. The Great Atlantic and Pacific Tea Company (1858), F. W. Woolworth and Company (1879), and S. S. Kresge and Company (1879) are examples of pioneer chain organizations still prominent today. Chain stores have accounted for about one-fifth of all retail sales in recent years. They are relatively strongest in the fields of variety goods, foods,

[11] For a comprehensive treatment of this subject, see Edwina B. Hogadone and Donald K. Beckley, *Merchandising Techniques*. New York: McGraw-Hill Company, Incorporated, 1942.

shoes, drugs, and automobile accessories, although they may be found in a wide variety of fields.[12]

In the foods field, the early type of chain store has largely been replaced by a comparatively new, though now familiar, development, namely, the super market. Super markets are large, departmentalized, self-help stores, which sell products at relatively low costs on a cash-and-carry basis. Super market customers seem to enjoy the opportunity afforded to wheel a basket cart along the aisles in leisurely fashion, mingling with friends and neighbors, while inspecting various "buys" displayed on open shelves. Close to half of the food business in the United States at midcentury was carried on by super markets.[13]

a. Comparative strengths of four types of establishments. 1) *The small independent:* Despite the impressive growth in large-scale retailing during recent years, the small independent still remains "cumulatively dominant" in the retailing field. Independent retailers still account for close to three-fourths of all retailing sales, even though the volume handled by the typical firm of this type is disturbingly small.

These small stores, characteristically, are operated by the proprietor and his family. In some cases, they utilize outside help, consisting of individuals who are willing to accept compensation at a comparatively modest hourly rate. The great strength of the independent store lies in the close interest evidenced by the owner himself in the business. a) In the conduct of the business, the owner-manager is almost invariably at hand when needed to formulate policies, execute programs, and exercise control in the interest of achieving desired results. b) In the employee-relations field, the owner-manager is able to exercise a close personal type of supervision directly over all employees of the store. c) In the customer-relations field, the owner-manager is frequently able to build up a close personal relationship with customers who are, in good part, his friends and neighbors within the community. d) In the field of management, the owner-manager has lines of communication both short and direct. He has the great advantage of being able to focus attention in concentrated fashion upon the situation unfolding before him. His attention and his loyalties are not divided to the extent that is sometimes the case with competing types of stores.

The small independent store has some disadvantages that seem to be inherent in the situation fully as much as its advantages. Other disadvantages are subject to direct and rapid improvement under alert management. A first disadvantage lies in the small-scale nature of operations. The scope for spread of necessary managerial and operating expenses is comparatively small. In many instances, each unit sold must bear a disproportionately large burden, even though the owner practices the most rigid type of economy with respect to total amounts involved. Small stores suffer from the fact that they must customarily purchase in uneconomic lot sizes. They pay a higher unit cost than large competitors, because of the extra services that the manufacturer and wholesaler are forced to perform in filling small orders.

The employees of a small store cannot be high-powered specialists in any sales field. They are necessarily generalists, with but little detailed knowledge of the majority of the product fields in which they endeavor to meet customer demand. The wages that the shopkeeper can afford to pay will not attract and hold employees of unusual talent.

The manager himself is often his own worst enemy in the field of small store operation. Frequently, he lacks even an elemental training in the principles, objectives, techniques, and procedures of business op-

[12] Melvin Anshen, *An Introduction to Business,* pages 406–407. New York: The Macmillan Company, 1949.

[13] Agnew, *et al., op. cit.,* pages 112–113.

eration. Consequently, he makes mistakes in business judgment and is inefficient in his operations. Sometimes the cumulative effect of small errors drives the owner-manager to the wall. In other instances, a single error of unusual magnitude will lead to bankruptcy. The mortality rate of small retail stores is high, in large part, because they are typically financed on a shoestring basis. In many instances, the two or three months' time lag between wholesaler deliveries of goods and collection of billings accounts for the bulk of the retailer's working capital. In troubled times, the marginal retailer may go under for lack of the faintest semblance of a cash and other liquid-asset reserve.

2) *The department store:* The department store succeeds in overcoming some of the important disadvantages confronting the small independent. Yet it, in turn, must cope with a number of complex retailing problems peculiar to the conduct of a department-store enterprise.

In small department stores, the individual departments are each frequently no larger than comparable single-line specialty stores. The unlike nature of items handled in assorted departments, in such cases, precludes any substantial saving from large-scale purchasing. In large stores, each department tends to be an economic unit in terms of purchasing considerations. Purchase orders can be shrewdly placed by specialized buyers, and delivery can be made in economic lot sizes.

A high sales volume enables departments within a large store to engage trained retailing specialists of high competence. This volume also enables the department to absorb its share of the costs of centralized store management and of centralized service and promotional costs. The specialized central management of a department store can spread its own costs over a great many departments. It can undertake projects that would be prohibitive for a small general store. The department store offers a great many special services. It can engage extensively in advertising and in sales promotional devices. Located in a main shopping district, the store draws customers from a relatively large trading area. Customers often come to the store in a mood to buy sizeable quantities of merchandise. The store is typically fitted out in attractive modern design. This appearance is usually maintained scrupulously throughout its life span. An effort is made to build a store reputation for high quality service amid pleasant, luxurious surroundings.

In recent years, numerous department stores have experienced increasing difficulty in remaining solvent. High fixed costs of operation have, in numerous cases, led to financial disaster in times of depression and recession. High operating expenses resulting from the multiplicity of services and from the great number of sales personnel required to man the organization are difficult to cover in the face of rapidly falling values. Labor has also become a relatively expensive cost item during recent years of high volume output by the economy as a whole. Despite an endeavor to keep labor costs in line, many department stores are confronted with an evolving situation in which their accustomed modes of operation are becoming decidedly obsolete. In an effort to strengthen their financial position, more and more department stores have recently opened branch stores in suburban shopping districts. They thus take on many aspects of a chain organization.

3) *The chain store:* Chain-store organization may be used to obtain advantages of centralized ownership and management, while operating physically decentralized store units. All major store functions that lend themselves to centralization of authority are directed by central management. This arrangement enables the chain organization to engage the services of top staff specialists for such functions as purchasing, store layout, advertising, accounting, and pricing. The task of the unit store manager is correspondingly simplified by this centralization. A unit manager of given caliber can achieve better sales results locally if

many managerial tasks are handled centrally by qualified specialists.

Chain stores serve as outlets for an integrated distribution system. The central chain organization often finds it economical a) to purchase directly from the manufacturer, b) to store goods in its own warehouses, and c) to deliver them in company-owned trucks to retail chain units. As the wholesaler's functions are taken over by the chain organization, the wholesaler's margin is available to be applied to the chain's distribution cost. If the chain organization performs its distribution functions efficiently, its retail-sales price may be correspondingly low and its retail volume and profit may be fittingly high.

Limiting factors in chain-store growth are a) the limited ability of a single-management organization to cope effectively with highly-complex administrative problems affecting diverse localities, b) the limited degree of initiative displayed during emergencies by unit personnel who are imbued with the routine set up by central headquarters to insure uniformity of practice, and c) the attainment of a level of activity beyond which additional savings from added units and added volume are of small significance and are outweighed by other disadvantages, such as those indicated.

4) *The super market:* Super markets in the foods field, and increasingly in related fields as well, have achieved a comparative price advantage through elimination of all optional services and through increased volume of sales. The typical super market provides free-parking space near the store to which the customer can carry sizeable packages. The basket cart that the customer pushes around features ample capacity. The full line of goods and produce carried by the store encourages the householder to "stock up" on each shopping expedition, once the day's specials have enticed him to enter that particular store. The result is a high average-purchase volume per customer. This fact in itself contributes toward efficient utilization of facilities under favorable operating conditions.

The super-market principle may be combined either with independent ownership or with chain ownership. To the extent that it answers consumer wants, the super market represents an improvement in merchandising methods that other types of stores must reckon with increasingly.

b. Some problems of the retail establishment.[14] The basic functions of retailing must be performed in all retail establishments. We may most conveniently inspect these functions in a store of some considerable size. The process of specialization will have differentiated many separate, though interrelated, functions in this type of retail establishment. A brief look at the organization and operation of a department store may serve to illustrate basic retailing activities.

The typical department store is a corporation under control of a board of directors elected by stockholders. The directors, in turn, select the officers of the company who are responsible for the operations conducted by the firm. The president, or a general manager appointed by him, is in charge of activities of day-to-day management. Main divisions in a department-store organization chart include the following:

1) Store management, which encompasses a) care of the building and equipment, b) procurement of supplies, and c) provision of customer services.

2) Personnel, which encompasses the selection, training, placement, and maintenance of an effective work force.

3) Finance and control, which encompass a) long-term capitalization, b) provision of short-term working capital needs, c) control of credits and collections, d) planning of store budgets, e) operation of the accounting system, and f) preparation of financial statements.

4) Advertising and public relations, which encompass the building of good will for the firm and the planning of production of advertising material.

[14] See Hogadone and Beckley, *op. cit.*, pages 10–24.

5) Merchandising, which encompasses the buying of merchandise, the planning of stocks, the planning of merchandise promotions (along with the sales-promotion division, in some cases), and the selling of merchandise (along with the store-management division, in some cases).

Within the merchandising department, a key group of personnel under the merchandising manager are the department store buyers. These buyers possess an expert knowledge of the specific lines of merchandise in which they specialize. They must know the merchandise well to be able to purchase wisely themselves. They should also know it well in order to instruct sales people in effective methods of selling this merchandise to various types of customers. The buyer should know the market itself, as well as the merchandise. This aspect involves both sources of merchandise and price considerations. The buyer should know the major techniques of sales promotion that are applicable to his work. In this way, he can aid sales-promotion and advertising specialists. He can also use this knowledge in helping individual sales people to sell effectively.

The buyer must be able to understand, interpret, and use statistical information concerning his purchases, sales, and expenses. The finance and control division usually supplies basic data of this type. The buyer must convert these data to fit specific situations as the occasion may arise. Above and beyond the ability to use statistical data, the buyer should possess an ability to predict merchandising trends with reasonable accuracy, well in advance of the time when the trend might otherwise force unplanned adjustments in the established merchandising pattern.

In order to carry out these and other duties successfully, the buyer must have cultivated an ability to work well with people. Supervisory ability is, of course, involved. It is particularly important, moreover, that the buyer be able to work well with colleagues on the staff. He should also possess a mind that habitually seeks out and understands the wants and whims of the customers who, in the final analysis, determine the success or failure of the buying program of the store.

A small, independent retailer has buried in his one-man or one-family organization, in one manner or another, the basic operational problems of retailing suggested for the department store in the preceding paragraphs. An independent retailer will undoubtedly fail if he does not set up and activate a feasible project in the first place. He will probably fail if he is unable to adjust readily and successfully to changed conditions. He may find it wise, under certain unfavorable circumstances, to liquidate his operation before he is driven to the wall. A downward shift in population following the abandonment of a local industry might signal one such occasion calling for relocation by the retailer as well. The construction of competing super markets on both sides of the building that houses the pioneering independent might possibly call for liquidation, despite an increase in population within the community at large.

A similar analysis, varying in detail, could be presented for the department-store retailer, the chain-store retailer, and the super-market retailer. The point to be made here is that there is an important place in our growing, evolving marketing structure for retail establishments of all kinds. Using the case method of analysis upon his own business, the retail-establishment proprietor may be expected to fashion his own sphere of comparative advantage with reference to his individual situation as he sees it and lives it.

2. *WHOLESALING*

The wholesaling business in the United States traces back to colonial times when merchants in Atlantic ports imported goods from Europe for sale to other middlemen and commercial buyers, rather than to ultimate consumers directly. These wholesalers concentrated their efforts upon buying in relatively large quantities and upon selling

in smaller lots for resale.[15] As domestic manufacture grew in importance, the wholesale importers tended to add American-produced goods to their stock in trade. The wholesale merchant also grew in importance and spread out geographically throughout the 19th century. Essentially, the increase in wholesaling represented a natural development in the process of specialization of labor, which accompanied the Economic Revolution.

The increasing separation of producer and consumer under the factory system, in which specific types of industry tended to concentrate in single localities, gave rise to the need for middlemen to bridge the widening gap between maker and user. For decade after decade, the wholesaler served as both a cause and an effect of this continuing spreading out of the market. The process was facilitated greatly in post-Civil War years by both the sudden growth in American plant capacity and the tremendous improvement in American transportation facilities. Our farflung railroad network both extended the distance that goods could be carried and reduced significantly the unit cost of carrying individual products.

The business of wholesaling experienced its golden age of expansion during the period 1880 to 1910.[16] Although wholesaling continued to grow both in number of firms and in volume of goods handled in succeeding decades, the hegemony of the traditional wholesale merchant has been progressively challenged by integrated manufacturers, integrated retailers, and other specialized middlemen. Wholesale merchants have retained their greatest strength in the sale of convenience goods, such as drugs, groceries, and appliance repair parts, for these items are customarily distributed by manufacturers through hundreds of thousands of scattered retailers. Manufacturers and retailers, seeking to "streamline" the distribution process in the quest for dollar savings, have not, as a rule, found the opportunities as beckoning in the convenience-goods field as in the cases of other types of products.

a. Characteristics of six types of establishments. 1) *Service and limited-function wholesalers:* These groups, taken together, encompass the traditional field of wholesaling in the popular sense of the term. Men performing full-service or limited-function wholesaling duties are commonly known as wholesale merchants. As the U. S. Census includes in wholesale trade the selling of all goods except those sold at retail, however, we must, for statistical purposes, consider wholesale merchants to be just one of six distinctive types of wholesalers. At mid-century, service and limited-function wholesalers comprised approximately 50 per cent of all wholesalers in the broad sense of that term, and accounted for just 40 per cent of all sales reported as having occurred at the wholesale level.

(a) Service wholesalers normally offer to retailers and to manufacturers the full line of services associated with wholesaling. They act as buying agent for the retailer and as selling agent for the manufacturer. They assemble supplies of goods. The wholesaler's outside salesmen take orders for products and give aid to retailers and to industrial purchasers. The wholesaler commonly advances credit to these two groups. Lastly, he assumes the risk of loss through change in value or through physical deterioration.

(b) Limited-function wholesalers endeavor to serve their clients at reduced cost by eliminating one or more of the services normally offered by the full-service wholesaler. (1) "Drop" shippers, for instance, eliminate costs attributable to the carrying of warehouse stocks. They ship goods directly from the manufacturer or producer

[15] See Paul D. Converse, Harvey W. Huegy and Robert V. Mitchell, *The Elements of Marketing*, 5th ed., page 306. New York: Prentice-Hall, Inc., 1952.

[16] *Ibid.*, page 306.

to the customer. (2) "Cash-and-carry" shippers, as the name suggests, stock goods for cash sale only and do not offer delivery service. They may also reduce sales expense somewhat by eliminating outside salesmen. (3) Wagon jobbers combine the functions of selling and delivering by carrying their stock in trade with them in a truck. As soon as a sale is made to a retailer, the items involved are delivered from the street, often on a cash basis. (4) Mail-order wholesalers, like mail-order retailers, perform all of the normal jobbing functions, but rely upon mail catalogues rather than personal salesmanship in making contact with their customers. This type of limited-service wholesaling is not of great significance in the over-all picture, and its potentialities are closely limited.

2) *Petroleum bulk tank stations and terminals:* Petroleum bulk stations are specialized wholesale distributors of gasoline, oil, and other petroleum products. The large oil refining firms figure prominently in this field of distribution, although a number of such establishments are independently owned and operated. As this wholesale business requires highly specialized equipment, including storage tanks and trucks, the U. S. Census accords it separate classification upon the basis of product handled. Petroleum wholesalers comprise approximately 15 per cent of all wholesalers, and account for 7 per cent of all wholesale transactions.

3) *Assemblers:* Assemblers are commission merchants who handle commodities on a consignment basis. They are prominent in the marketing of agricultural products, such as vegetables, grains, and poultry. Functions performed by commission merchants include the assembly, grading, storage, handling, financing, and selling of commodities. Assemblers or commission merchants operate on a consignment basis and do not take title to the goods they handle for their clients, who are regarded legally as the sellers of the merchandise that the assemblers dispose of to customers. Many firms operating as assemblers are independently owned. Others are owned by chain organizations. Still others are operated as cooperative establishments by producer groups. Although 15 per cent of all wholesalers are classified as assemblers, their share of wholesale transactions amounts to just 5 per cent of the total wholesale market.

4) *Agents and brokers:* Agents and brokers who specialize in market transactions involving particular types of products frequently bring valuable information of market developments to the attention of their clients. For their services in buying, selling, and informing, these middlemen receive compensation in the form of fees and commissions. Agents and brokers are classified as *functional* middlemen by reason of the fact that they do not take title to the goods that they offer for sale. In this respect, they may be contrasted with *merchant* middlemen who do acquire title to their stock of goods. Manufacturers' agents comprise the largest group within this category. These agents usually seek to sell the products of several different manufacturers who tend to operate in the same general type of market. In this way, the agent can piece together a profitable business. Although no single manufacturer is asked to pay the agent's full expenses, the pooled expenditures of several manufacturers enable each participant in the arrangement to have his goods placed upon display in an appropriate manner. Manufacturers' agents invariably represent the seller in a transaction.

Brokers, on the other hand, may represent either buyers or sellers, or both, in their transactions. They comprise the second largest group of functional middlemen. Brokers focus their activity primarily along food and other commodity lines. Manufacturers' agents tend to establish continuous relations with a limited number of clients, but brokers operate as free agents offering their services to any producer, wholesaler, or retailer who is active in the field. Brokers receive their compensation in the form of a commission or fee, which is based upon the value of completed transactions. Approximately 10 per cent of all wholesalers are

agents or brokers. They account for 19 per cent of all wholesale transactions.

5) *Manufacturers' sales branches:* Manufacturers' sales branches are essentially wholesale outlets operated by a single manufacturer as a means of distributing his own line of goods. About two-thirds of these outlets perform a warehousing function, while one-third are simply sales offices, which do not keep a stock of goods on hand. In either case, the normal purchasing function of a wholesaler is little stressed, for their source of supply is their own parent organization. A few convenience items supplied by other manufacturers may be added. As the name of this wholesaler type would indicate, prime emphasis in manufacturers' sales branches is placed upon the promotion and management of sales. These wholesalers comprise 10 per cent of the field in point of number and 24 per cent in respect to volume of sales.

6) *Chain-store warehouses:* As the name implies, chain-store warehouses are wholesale centers for supply of retail outlets operated by the parent chain. These warehouses maintain stocks of items needed by the retailers. They assemble goods in large lots and break bulk or packages into smaller quantities for delivery upon short notice to individual stores. Organization records are customarily kept at these warehouses. They may also be used as supervisory centers by regional management officials of the chain. Although chain-store warehouses are insignificant in number compared with the total group of wholesale establishments, they account for 5 per cent of all wholesale transactions.

b. Some problems of the wholesale establishment. A central problem confronting wholesalers of all types during recent decades has been the increasing tendency by manufacturers, on the one hand, and by large-scale retailers and associations of smaller retailers, on the other hand, to shortcut the usual channels of distribution. In many such cases, the position of wholesaler has been eliminated from the marketing organization chart.

It should be borne in mind, however, that the actual functions of the wholesaler cannot lightly be stamped out. Although the form may be varied to fit the particular case, the bulk of the wholesaler's services must be performed, in one manner or another, in the great majority of marketing operations. When manufacturers serve as their own wholesalers, they may eliminate much of 1) the wholesale buying function. They must still 2) make sales contacts with scattered retail stores, 3) break up goods into convenient size for retailers, 4) transmit market information to retailers and find out about market conditions from retailers, 5) extend credit, and 6) assume risk of loss on stocks of goods held. When retailers act as their own wholesalers, they may eliminate much of 2) (the making of sales contacts), but the other wholesaler functions listed above continue on with but minor changes.

It may be seen from the above analysis that the independent wholesale merchant is losing ground to organizations that endeavor, themselves, to perform wholesale functions more efficiently, rather than to organizations that succeed in eliminating the bulk of wholesale activity. For this reason, the wholesaler who is able to conduct his business efficiently in comparison with nonwholesaler groups may expect to find many representatives of these groups content to remain in his lists of customers, rather than become competitors in the business of wholesaling.

In many instances, manufacturers have become dissatisfied with the manner in which services are performed by wholesalers. A frequent complaint has been that wholesalers' salesmen are primarily "order-takers" who fail to push the manufacturer's product line aggressively. This charge is basically not unfounded. The fact that it is advanced in the form of a charge, however, rather than in the form of an observation, results from a misconception on the part of these manufacturers as to what the whole-

saler's selling function should be. The typical wholesaler stocks thousands upon thousands of items in a great variety of product lines. His salesman cannot take time to push individual items with individual retailers. His main job is to keep the retailer happy in his dealings with the wholesaler, not to promote a new item put forth by a particular manufacturer.

The manufacturer in question should determine whether or not the wholesaler is performing his *normal* function in an efficient manner. If he is, the individual manufacturer should usually retain his contact with the wholesaler, for the wholesaler probably performs the normal wholesale functions more efficiently than could the manufacturer with a relatively limited spread of products with which to absorb wholesale distribution costs.

The manufacturer should attack his sales-promotion problem head-on, however, by utilizing his own sales force to perform "missionary" selling work among the wholesaler's retail customers. He should step up his advertising and sales promotional activities with reference to the lagging product line. Only in special cases does it pay the manufacturer to become his own wholesaler. Instances of this type are 1) when perishable items must be quickly distributed and carefully watched, or 2) when pieces of apparatus require specialized installation and service, or 3) when products are distributed through a relatively limited number of retail outlets.

The wholesaler remains a key figure in the distribution process. His sphere of competence is relatively strongest with reference to routine convenience goods requiring distribution through a large number of small and widely-scattered retail outlets. He must adapt his tactics and practices to the situation in hand, in other instances, in order to retain for himself an optimum share of the potential wholesale market.

3. TRANSPORTATION

The history of civilization itself might be woven in satisfactory fashion into a presentation of the evolution of various modes of transportation. Transportation, in one form or another, has been a central problem for the human race ever since primitive man learned to build rafts, domesticate beasts of burden, and mount heavy loads on wheels.

a. Characteristics of five modes of transportation. Colonial America was made accessible to European settlers only through use of ships capable of overcoming problems of ocean transportation.[17] As the settlers pressed inland, they utilized river craft for transportation of people and cargoes. Canals were later dug to improve inland water transportation and steamboats were developed to speed traffic on its way. Land routes were of the roughest sort during Colonial times. Private turnpike companies, which built good stretches of road between populated points, charged tolls for their use. Wagon travel over even the best of these roads was a slow and costly proposition. Water travel was generally superior to land travel throughout the Colonial period. This condition prevailed until the coming of the railroad.

1) *Railroad transportation.* The Baltimore and Ohio Railroad marked the inauguration of the railroad era in the United States as it opened up a 13-mile stretch of track in 1830. Railroads did not establish supremacy in the transportation picture, however, until the 1850's, at the close of which decade 30,000 miles of rail roadbed were in operation. Although the Civil War temporarily halted railroad construction, developments associated with the war and the economic revolution accompanying it laid the groundwork for a tremendous post-war railroad boom. Miles of rail roadbed passed 50,000 during 1870, 90,000 during

[17] See D. Philip Lochlin, *Economics of Transportation*, pages 68-85. Chicago: Richard D. Irwin, Inc., 1947.

1880, 160,000 during 1890, 190,000 during 1900, and 240,000 during 1910.[18] As we noted earlier in chapter 2, a peak of 254,000 miles of rail roadbed was attained in 1916. Other developments in the railroad field are sketched in chapters 1 and 2, as well.

2) *Motor transportation.* The railroad was increasingly challenged by the truck, the bus, and the passenger car, and by the airplane, in the years and decades following World War I. The Federal Highway Act of 1916 (amended in 1921) was instrumental in the early construction of a national highway system for the rapidly-expanding motor vehicular travel of the postwar period. This system of grants-in-aid encouraged states and local governmental units to construct road systems in order to qualify for Federal funds. More than 3 million miles of rural roads were in operation within the United States at midcentury.[19] The toll system fostered two centuries earlier by turnpike companies was increasingly in evidence on great new superhighways. The tolls collected on these highways were to be paid out of operational savings to motorists using the improved roads.

More than 45 million vehicles (1/6th commercial trucks and busses and 5/6ths passenger cars) crowded the highways at midcentury.[20] These passenger cars and busses made deep inroads into railroad passenger service almost from the outset. Motor passenger-vehicle registrations nearly quadrupled from 1915 to 1920, rising from 2.3 million to 8.2 million. They more than doubled in the next five years to reach 17.5 million in 1925.[21] Steam-railroad passenger miles reached a peak of 47 billion miles in 1920, but declined more than 25 per cent to a figure of 36 billion in 1925. The railroad-passenger mile decline continued unabated until a trough of but 16 billion miles was reached in 1933. Although railroad-passenger travel fell off to one-third of its 1920 peak, total travel desires and habits of the American people in 1933 encompassed three times as much transportation as they did prior to the automobile era.[22] Since that time, passenger use of railroads has turned upward in number of miles traveled, reaching approximately 25 billion in 1940, 95 billion in World War II's peak transportation year, 1944, and about 50 billion near the midcentury mark.[23]

Although it has long been true that at least four-fifths of the operating revenues of the railroads are received from freight, the passenger service they perform is of great importance to the carrier, as well as to the country. Given the high proportion of "joint" costs which prevails in railroad operation, as long as passenger revenues cover out-of-pocket costs and contribute something toward overhead, they are decidedly worthwhile from a financial point of view. Before 1923, passenger-train revenues exceeded 25 per cent of total operating revenues. Since that time, highway competition has forced passenger train usage and revenues down to a point at which they account for less than 15 per cent of total operating revenues. The net operating revenues of this service are no longer self-supporting from a cost-accounting point of view. Passenger services now cover only the sales expenses attributable to them and part, but not all, of the passenger proportion of expenses common to both freight and passenger service. The operating ratio

[18] See Emory R. Johnson, Grover G. Huebner, and G. Lloyd Wilson, *Transportation: Economic Principles and Practices*, page 19. New York: D. Appleton-Century Company, Inc., 1940.

[19] U. S. Bureau of the Census, *Statistical Abstract of the United States, 1950*, (71st edition). Washington, D. C., 1950.

[20] *Ibid.*

[21] *Ibid.*

[22] Federal Coordinator of Transportation, *Passenger Traffic Report*, page 21. Washington, D. C.: U. S. Government Printing Office, 1934.

[23] U. S. Bureau of the Census, *Statistical Abstract of the United States, 1950*. Washington, D. C.: U. S. Government Printing Office, 1950.

of passenger service is highly unfavorable when compared with the freight-service ratio. Nevertheless, on an increment revenue basis, passenger service is highly important to railroad companies. Most lines would suffer bankruptcy without it. The country also needs railroad-passenger facilities by reason of the political, social, economic, and military values that they yield.

Railroad freight service has also suffered from competition by trucks. After tripling from 1900 to 1920, steam-railroad ton miles leveled off at approximately 415 billion from 1920 to 1925. This figure declined to 250 billion in the depression trough year 1933. It rose to 375 billion in 1940 and to 740 billion in the war-peak traffic year, 1944. After dropping off to 600 billion at the war's close, ton miles again matched war-peak levels near the midcentury mark.[24]

Meanwhile, the number of competing motor trucks on the roads rose spectacularly year after year, pausing only momentarily in its rapid growth during the trough of the depression. Truck registrations rose 8-fold from 1915 to 1920, to reach a figure of 1 million vehicles in that latter year. By 1925, fully 2.5 million trucks were operating on our expanding highway system. Another million had been added by 1930, and still another by 1940, when 4.5 million commercial vehicles were using the national highways. An additional million commercial trucks joined the fleet by the close of World War II. More than 7 million commercial vehicles cruised the highways, with ever-growing cargo-capacity and with ever-increasing speed and efficiency, at midcentury.

3) *Air transportation.* The rise of air transportation since World War I, particularly during the decades of the '30's and '40's, was spectacular in percentage growth from year to year, though not in the absolute volume of traffic carried in any particular year. In 1934, for instance, the air lines carried but half a million passengers, as compared to the railroads' half a billion passengers, a relationship of 1000 to 1. By the close of World War II, the air lines figure had risen to 15 million passengers. At that point, the air figure was in ratio of 1 to 100 in comparison with railroad-passenger travel. By midcentury this ratio had reached 1 to 80, with the railroads losing ground relatively, though still far and away in the lead in absolute terms.[25]

Air freight, though growing by leaps and bounds in the absolute, is not yet competitive with rail and motor freight, except for a limited group of high-value, light-weight articles for which speed in transit is of key importance.

4) *Water transportation.* Although water transportation fought and lost a pitched battle with railroad transportation in the middle of the 19th century, it has again entered the inland transportation arena as a contender for limited honors in the middle years of the 20th century. The movement to revive water transportation started in the first decade of the 20th century when President Theodore Roosevelt set up the Inland Waterways Commission and when New York State transformed the old Erie Canal into a modern barge canal. Further stimulus to water transportation came from the U.S. Shipping Board in World War I, as it hurriedly developed a vast U.S. merchant marine for war transportation purposes. A number of dam construction projects and harbor improvement projects during the past several decades have had the establishment of low-cost inland waterways as one of their multiple objectives. Numerous specialized craft, owned for the most part by large industrial firms, have made profitable use of our inland waterway system in limited areas of the country.

A tremendous volume of water traffic moves annually over the Great Lakes, carrying raw materials from mines to great blast furnaces located in the Middle West

[24] *Ibid.*
[25] *Ibid.*

and in the Northeast. The Mississippi River system also affords cheap water transportation for bulk materials moving from port to port. A current political issue at midcentury was the question of whether or not to improve the Saint Lawrence seaway system so that Labrador ore and western farm products might flow to their respective markets along this international inland water route.

Coastwise, intercoastal, and ocean shipping flying the U.S. flag received much needed stimuli during and after World War II by their obvious utility during times of national emergency. Because it was essential to keep a strong merchant fleet for defense purposes, it followed that government subsidy both of shipbuilding and of ship operation would remain a part of U.S. Maritime Commission policy as long as private enterprise could not "go it alone" in this highly competitive, international field of transportation.

5) *Pipe-line transportation.* To complete the transportation picture, we shall list pipeline operation as a fifth mode of transportation. Pipe lines have been put to specialized use as carriers of petroleum products and natural gas. Several hundred thousand miles each of petroleum and of natural gas pipe lines stretched from production centers to population centers at midcentury. Some experimentation is under way exploring systems for transporting other basic products, such as wheat and coal, in pulverized or hydrogenated form, through pipe lines.

b. Some problems of transportation. 1) *Coordination of modes.* Ever since new forms of transportation blossomed forth during the 1920's to challenge railroad domination, a problem has been shaping up as to how the various modes of transportation might best be fitted together in a national transportation system. In 1920, Congress attempted to rationalize the railroad system, as it returned the railroad companies to private operation following World War I. The role soon to be played by competing modes of transportation was not adequately visualized by the Congress of that early period. During the 1930's, Congress several times sought to deal with problems confronting the railroads and the motor carriers, as they operated under depression conditions. The concept of a coordinated national transportation system was ably advanced by the Federal Coordinator of Transportation, Joseph B. Eastman, during this period. The Interstate Commerce Commission (which regulates the railroads, motor carriers, connecting inland water carriers, and pipe lines), the Civil Aeronautics Authority (which regulates the air lines), and the U.S. Maritime Commission (which regulates Great Lakes and ocean shipping) still have a most difficult task cut out for them in achieving national transportation coordination today. Even if these regulatory bodies could for once see eye to eye with each other and with Congress, their problems would not thereby be resolved. In our dynamic economy, a measure appropriate at the time of its enactment soon becomes dated by shifts that occur in underlying economic factors with the passage of time.

2) *Problem analysis by industrial traffic managers.*[26] The over-all transportation system may be of great interest to the industrial traffic manager of a given business firm, both as a citizen and as a party at interest. It is not specifically his job, however, to reform this national system. He need not even understand broad transportation issues in all their ramifications in order to fulfill his job with the firm. What the industrial traffic manager is charged with doing is of great importance to his own firm, however, in its position as a user of transportation services.

The industrial traffic manager has the task of securing efficient and economical transportation service in moving the firm's raw materials, supplies, and manufactured goods from their source through areas of

[26] Johnson, *et al., op. cit.,* pages 130–141.

production to areas of consumption. The problems faced by these managers grow specifically out of the needs of their own firms. The nature of the industry involved is important. The specific location of the individual firm, with reference to transportation facilities, is a controlling factor in the solution of whatever traffic management problems may confront the firm.

(a) Some routine services performed by industrial traffic managers include (1) the determination of rates and charges that the firm must pay for specific shipments by alternative routings under given conditions. (2) The determination of routings to be used is another important duty, for the shipper can frequently save much time and money by exercise of discretion here. (3) The traffic manager places orders with the transportation company well in advance of shipment for freight cars and trucks to be "spotted" at a given loading zone at a given time. (4) He also keeps records, prepares shipping papers, submits claims for losses sustained, issues directions to personnel, clears up difficulties, and undertakes other routine supervisory duties pertaining to transportation problems of the firm.

(b) An alert traffic manager undertakes longer-range constructive duties as well. He seeks to develop improved methods of transportation for use by his firm. This function might involve (1) selection of sites for new plants or warehouses, (2) research concerning rate structures affecting the firm and the industry, with an eye to seeking redress from the carriers, (3) analyses of packing, handling, and shipping methods used by the firm with an eye to feasible improvements.

(c) The traffic manager also cooperates with other businessmen who are interested in and affected by problems that come to his attention. (1) Within his firm he seeks to coordinate his efforts with those of the purchasing agent, the production control supervisor, the production manager, and the sales manager. (2) Within his industry, he seeks to cooperate on broad problems of mutual concern with traffic managers of other firms. (3) Within his community and region, he seeks to cooperate with traffic managers of other business firms and with traffic management representatives of other business organizations, such as chambers of commerce and associations of manufacturers. (4) To the maximum extent that his special party-at-interest position will permit, the competent traffic manager seeks to cooperate with the carriers who supply the services he needs. The mutual well-being of carrier and shipper is an objective that will foster the long-run interest of the traffic manager's individual firm.

DEVELOPING MARKETING POLICIES AND PLANS

Just as the industrial traffic manager whose firm has contracted for a shipment must select a specific traffic routing, the individual producer who has decided to market a product must develop a specific marketing plan. The traffic manager's decision as to routing is influenced, and in many cases determined, by relatively long range transportation policies adhered to by his firm. The individual firm developing products for the market faces the problem of evolving a set of broad marketing policies to serve as a frame of reference, at times when it wishes to construct specific marketing plans. Issues arising in the development of policies and plans in the general field of marketing and advertising occupy our attention in chapter 13.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	221–222	In what ways have marketing and production proved mutually stimulating to each other during the long course of development of our national economy?
2	222–223	If an integrated firm were to produce its own raw materials, manufacture products from them, and distribute products to company-owned stores for resale, to what extent can it eliminate what might be termed "normal marketing functions"?
3	223–224	Would you expect the attitude toward marketing cost held by the group of 7 million persons engaged in retail trade to differ significantly from that held, on the average, by the 60-odd million persons comprising our working force as a whole? Explain.
4	223–225	How might the special interests of wholesaler groups in marketing affairs differ from those of retailer groups?
5	225–226	Which of the marketing functions normally handled by the sales manager must be performed by management, regardless of the size of the firm and/or the nature of the field within which it operates?
6	226–227	List several examples of each of the following types of products. consumer goods, industrial goods; durable goods, consumption goods; convenience goods, shopping goods.
7	227	Under what conditions might a radio-TV firm reasonably decide a) to expand and b) to contract its product line?
8	227–228	If all firms had full knowledge of both long-run and short-run market information for use in planning and decision-making, would the advantage to be gained by each firm "cancel out" with the result that no firm and no consumer would be better off than might be the case if only a fraction of this information were available to each marketing participant? Discuss.
9	228	Why is it normally desirable that each firm within an industry develop a market-research organization of its own, even if the market-research committee of the trade association for that industry customarily does all that can be expected of it?
10	228–230	If you were asked to take the affirmative in a debate on the topic of "Is Advertising Desirable In Modern Society?" what points would you prepare to rebut and what positive points would you stress?
11	230–231	As sales manager for a wholesale distributor of standard brand TV sets, what attributes would you look for in selecting salesmen to serve as your firm's contacts with independent retailers who are to be asked to carry your line?
12	230–231	Would the qualities, training, and information needed by the retailer's salesmen for successful selling differ significantly from those needed by the wholesale distributor's salesmen as per question 11? Discuss.
13	228–233	How might the job of sales-promotion manager in a radio-manufacturing firm differ from the jobs of sales manager and of advertising manager respectively?
14	233–234	Outline some problem areas that the merchandising manager of R.C.A. might wish to present for discussion by an interdepartmental merchandising committee, which has been appointed at his suggestion.

QUESTION NO.	PAGE REFERENCE	QUESTION
15	234–239	Characterize the major types of retail establishments that one might expect to encounter in a commercial history of Syracuse, from its origin as a Colonial trading outpost to its current position at midcentury as an industrial and trade center mustering a quarter-million inhabitants.
16	234–239	What discerning questions would you pose for investigation by a young business-school graduate who is undecided as to whether he should convert the general store his deceased father had founded in a now-booming California community into a modern department store or a modern chain-store organization?
17	239–243	Characterize the major types of wholesale establishments one might expect to encounter in a commercial history of Syracuse, covering the 100-year period, 1850–1950, during which it has become one of the major agricultural and commercial trading centers of upstate New York.
18	239–243	What business talents or abilities must be developed by a business-administration student who wishes to become a successful wholesale merchant?
19	239–243	As a member of the board of a moderate-size New Jersey radio firm, whose management is considering direct distribution of sets to retailers throughout the northeastern section of the United States, what discerning questions do you propose to ask in the next board meeting?
20	243–247	Characterize the major modes of transportation that have served the commercial needs of Syracuse from Colonial times to the middle of the current century, and indicate, in rough fashion, the degree of dominance enjoyed by each mode at critical benchmark dates during this period.
21	243–247	Are air lines and railroad companies competitors to any significant degree? Discuss.
22	243–247	As a member of the board of the New York Central Railroad and as a citizen of the United States, what is your attitude toward the expenditure of state or Federal government funds for a) construction of a New York State Thruway system running from Buffalo to New York City, b) improvements to upstate airports, c) improvements to the New York State Barge Canal (formerly the Erie Canal) running from Buffalo to Albany, and d) construction of the Saint Lawrence Seaway enabling deep-water vessels to reach the Great Lakes from the Atlantic? Under what conditions might you approve of each expenditure?
23	243–247	As the hard-working industrial traffic manager for G.E.'s Electronics Park, how might you support your boss's contention that you could be given a merited raise in pay out of savings you have made for the company in operating expenses?



13 Elements of Distribution: Marketing and Advertising Policies

*IN THIS CHAPTER, WE SHALL INVES*tigate some problems of policy-making in the marketing-advertising field. We shall view this field primarily through the eyes of the manufacturer who wishes to market a product or a product line. To a considerable extent, the points of view of wholesalers and of retailers, both of which types of marketing groups are discussed in chapter 12, are included in the manufacturer's calculations. The typical manufacturer is in business for the long pull, if only by reason of his heavy investment in specialized plant and equipment. He is well advised to include in his marketing policies and plans reasonable provision for satisfying the interests of wholesalers and retailers. The repeat business of these two groups, once they have become "sold" on the manufacturer's product and on the manufacturer's organization, is what customarily ensures a satisfactory volume of repeat business from ultimate consumers.

In the process of establishing reasonable marketing policies, the manufacturer should give due consideration to the following marketing areas:

1. Types of products to be marketed.
2. Channels of distribution to be used.
3. Make-up of the product line.
4. Pricing policy for the product line.
5. Sales approach to be stressed.

We shall first consider individual marketing-policy areas separately. Then we shall be in a position to observe the manner in which various aspects of given marketing problems characteristically blend and interact in actual case situations.

1. TYPES OF PRODUCTS TO BE MARKETED

We noted in chapter 12 that products may be classified for analytical purposes in a variety of ways. One useful classification involves a) consumer goods and b) industrial goods. For our current purposes, we should be well advised to separate c) agricultural products from the above two categories, even though they are, in some instances, consumer goods and, in other instances, business or industrial goods. The production and marketing methods used in agriculture are so distinctive that separate treatment for analytical purposes seems appropriate. Consumer goods, about which

Photograph at top of page: The unveiling of a new automobile line each fall marks the culmination of complex product development and merchandising activities undertaken by auto manufacturers. (*George Dorril and Ford Motor Company*)

we shall be primarily concerned below, in turn break down into 1) convenience goods and 2) shopping goods or specialty goods. The categories of 1) durable goods and 2) consumption goods may also be used.

At its inception, a manufacturing concern is usually built rather specifically around the "big idea" that has inspired its promoters to enter business for themselves. The central product may happen to fit into any one of the various categories listed above. The problem of adding to or subtracting from a product line, which continually confronts the going concern, is merely a paper planning affair at this stage, for the firm has not yet committed its resources or fixed its organization. The problem of visualizing and providing for the future growth and development of the firm is, nevertheless, of the utmost importance right from the outset, for the very reason that the firm can commit its limited initial resources wisely or unwisely, depending upon the initial adequacy of management's conception of its own future plans. A great deal of research and reflection is called for in the setting of market plans as a guide for construction, production, personnel, financial, and other related area plans.

Product questions that the promoters of a firm must answer at the outset include the following:

a. Is the product sufficiently developed or perfected to be placed upon the market? This question has a hard technical core, although, in its ramifications, it is far more than just technical. The TV firms had the wrong answer on this score when they launched the ill-fated "*television* is here" campaign in 1931. Many a firm has been forced to return a "once ventured" new product to the laboratories for additional technical research and product development.

b. Does sufficient demand exist or can it be created to absorb this product in satisfactory volume at a satisfactory price, which will make possible reasonable production and selling costs? If a firm is going to be faced with heavy initial losses during a lengthy developmental period, it should be aware of this prospect from the outset. It should also answer the fundamental question as to whether a real consumer want or need will be served by the proposed product.

c. What are consumer attitudes toward this proposed product, and can they readily be shaped in such manner as to encompass regular use? The answer to this general question may best be ascertained through market research. Professional market-research men seek to learn what actually will be acceptable and useful to the consumer. They are not, here, interested in "proving" a preconceived point for exploitation by the firm's advertising department. Field research, involving use of the written questionnaire or the oral interview based upon a questionnaire, provides the basic data for analysis in consumer-attitude surveys.

d. In what form can the product best be presented to the public? This question has a number of ramifications, including 1) What style and design should be adopted? 2) What type of package will show the product off to best advantage, as well as protect it? And 3) In what sizes and varieties should the product be put up?

Modern advertising and the rapid communication of ideas lead consumers to become dissatisfied at an early date with things as they are today. Products change in style along peripheral lines far more frequently than in basic design. The initial decision of a firm on design and style is a matter of great importance. The first impression the public receives of a new product depends almost entirely upon outward appearances created by style and design. Expensive dies and patterns must be constructed in conformity with these considerations. The desire of a manufacturer to keep up with style and design trends, or to lead the field in initiating changes, must be tempered by judgment as to whether or not retooling and other changeover costs are more than offset by tangible and intangible

gains for the firm, through product style and design changes.

Package and quantity considerations are surprisingly complex. The merchandise manager knows full well the importance of an attractive package for display of the product, as well as for protection of the contents. The "right" amount for various-size packages depends upon consumer-use and -buying habits. The desirability of satisfying varying tastes must be weighed against the increased expense of producing, handling, storing, and keeping records for a large variety of intermediate sizes and styles within a product line. The traffic manager of the firm is also interested in packaging. He is an advocate of strong containers, which can be fabricated at low cost, handled easily, stored readily, and transported under the lowest available freight classifications.

e. What quality characteristics should be built into the product? Quality is important both as a tangible series of specifications that are met and as an intangible group of attributes that consumers believe to be present. Quality is seldom, if ever, present in the absolute. The "best" product on the market almost invariably could be made still better through use of known techniques. These techniques are not feasible in actual practice in light of existing cost-price relationships. A quality product usually incorporates the highest grade workmanship, materials, and other features, for which consumers are willing to pay premium prices. Beyond a certain point, the absolute "best quality" product will have priced itself out of the market.

f. What will be the competitive position of this product on the market? Our firm could be putting out "just another mousetrap," which would compare with competing devices, in the public's eyes, about as closely as do the mice themselves in the dark cellar. If our product looks like others, or even if it merely has uses similar to those of other products, we must ascertain what real advantages we do have. What selling features can be developed to put our product in a favored position, compared with the competition? If we are fortunate enough to have a new development somewhat protected against competition, either in time, through being first on the market, or by patent, competitive considerations still will be involved. We should plan to market the product in such a way as to take advantage of and to conserve our lead. Competition for attraction of consumers' limited resources exists even for products that are noncompetitive in the narrower sense of the term. In such case, a firm will seek to set an optimum price that will maximize its long-run return.

g. What price shall the firm set on this product? Although we shall defer consideration of some broader aspects of pricing policy for product lines until later in this chapter, a start on product pricing can be made at this time. In some situations, little or no pricing problem exists for the individual producer. This is the case particularly in the marketing of certain farm commodities, such as cotton and grain, in which uniform grades of products bought and sold by large numbers of relatively small concerns tend to result in uniform prices paid. When products and services rendered differ, the scope for independent pricing action by the individual firm increases markedly.

A firm that has some range of discretion in setting the price of a new product may pay heed to its actual costs in arriving at a satisfactory figure. Such a firm will normally set a price that yields an attractive return at a given volume, but which is not so extremely high that the situation invites the early entry of competing firms. Once again, the individual firm is endeavoring to maximize its long-run return, rather than its immediate per unit profit. Although a firm with a new product that is not competitive can begin with costs and derive price, as time goes on and competition grows, the firm may have to shift more and more to market price as the starting point and work back to costs.

Moreover, imputed developmental costs

may have to be scaled down, and even be written off, to the extent that they cannot be built into the entire industry's price structure in the form of patent royalties. For instance, it will be recalled that an unexpectedly high volume of demand and a "sea wave" invasion of the field by companies that disregarded patent limitations led R.C.A. to scale down vacuum tube prices through a series of closely spaced price reductions, during the early years of the radio boom. In the long run, however, a free market price must strike an average sufficiently high to cover normal costs incurred in production and marketing of the product. The price required to keep the marginal producer active in the field will be more than sufficient to reimburse efficient, low-cost producers who form the backbone of the industry. An exception to this broad generalization will have to be conceded to the trough years of the Great Depression, at which time all prices, values, and anticipations of society were subject to reappraisal.

In a depressed market, a firm also pays close attention to costs for pricing purposes. In this instance, however, it distinguishes sharply between "out-of-pocket" costs and overhead costs, or between variable costs and fixed costs. Costs that have not yet been incurred and that tend to vary directly with variations in volume of output can be avoided in large measure if a firm were to shut down completely. Materials and labor tend to be direct, variable costs within broad ranges in most industrial situations. Many other costs, such as rent or maintenance of building, interest on debt, and property taxes, tend to continue on without close reference to degree of activity within the plant itself. If it came to a showdown, a firm would be better off to reduce its price, as necessary, to any level above out-of-pocket expenses in order to obtain orders, rather than to close down entirely. Such stopgap action would keep the organization together as a going concern until better times returned or until the existing plant was worn out as a producing unit. Any funds received above out-of-pocket expenses could be used to lessen the losses that would be incurred through the need of paying overhead expenses, which would continue anyhow.

We readily recognize the importance to a firm's pricing policy of the actions of competing firms, which help to make up the market. We should also recognize the interrelationships among pricing practices followed, types of products handled, types of customers catered to, and types of sales appeals used within the individual firm itself. For instance, a firm using a "quality-product" sales appeal normally, in its endeavor to sell "above the market," might be slow to accept the "out-of-pocket plus" depression pricing policy referred to, for fear that the pricing pattern set might "spoil" its later market.

A firm with a product that is superior to its competition may seek to take advantage of this fortunate situation either by setting a higher price or by seeking to capture a larger share of the market, or by combining both courses of action. The well-known economies of mass production and distribution, plus the prestige associated with successful expansion, frequently incline business administrators to select increased sales in preference to increased margin per sale. Elasticity or inelasticity of demand for the particular product in question leads to different solutions for different industries. If a relatively small reduction in price will result in a relatively large increase in demand, the product has an elastic demand curve for the volume range in question. Under such conditions, a firm that can expand its productive plant to exploit a cost or quality advantage over competitors will be well advised to do so.

The complexity of the pricing problems confronting the typical firm calls for advance policy setting by management as a guide to day-to-day adjustments. We shall discuss additional pricing considerations and issues at a later point in this chapter.

h. What should be the timing of the introduction and promotion of this particular

product? Producers of agricultural commodities have relatively little choice as to when their products will reach the market. Unfortunately, most farmers must sell their produce during the peak of the crop season when supply is greatest, relative to demand. The rise of the frozen-food industry has afforded some relief in this matter of timing during recent years. Nevertheless, the individual farmer still has difficulty in manipulating relatively uniform "laws of nature" for his individual advantage. Producers of such items as fur coats, electric fans, and refrigerators have considerably more control over the timing of production than does the farmer. The seasonal factor in demand for their products is of overriding importance, however, and they must do what they can to adjust both production and sales activities to it. The timing of the introduction of new styles and designs and the timing of the launching of advertising and sales-promotion campaigns are of critical importance in the marketing activities of many business firms. The proper timing of activities by one firm in a given situation will also be affected by the timing of other firms competing for the same general market.

i. What specific market or markets should be cultivated for this product? In one sense, the United States comprises the largest single market in the world. Yet, the American national market is also a composite of numerous other specific markets contained therein. Markets may be geographical areas covered or they may be types of people and institutions reached within the areas served. The over-all view should not be lost sight of as a policy guide. Yet, the nature of the market in a given case is a matter for specific investigation, which need not be left to mere guesswork.

At one level, a market may be the neighborhood trading area served by a single retailer. Again, it might be the geographical area served by a single wholesaler. The market for a metropolitan department store frequently is regarded as extending as far out into surrounding areas as do the homes of the more distant commuters, the outlying district evening paper subscribers, and the fringe recipients of free parcel-delivery service. Yet, the clientele of the yard-goods or the notions department is not by any means as widespread geographically as that of the furniture or the ladies' furs department. The trading area for a first-rate department store with national reputation may be many times more extensive than the trading area for a fourth-rate department store a few blocks away in a blighted retail area.

A manufacturer must also define his intended market or markets if he is to distribute a product with more than random effectiveness. Markets do not form in direct proportion to the geographical territory encompassed, nor even in direct proportion to population therein. Manufacturers are led to apply market-research techniques to specific products in an endeavor to define and pinpoint the market that can be developed for the item and the manner in which the item can best be sold. The results of this research are instrumental in setting the markets to be served and the channels through which the product can best be distributed to this market.

2. *CHANNELS OF DISTRIBUTION TO BE USED*

Once preliminary analysis indicates that the product is ready for marketing, as per the considerations discussed above, the focal point of attention may shift to the determination of which channels should be utilized in carrying on the distributive process. We have discussed the various types of wholesalers and retailers at some length in chapter 12. This survey of the choices open to the producer will serve as useful background now. We shall concentrate our attention upon the decision-making process that the manufacturer utilizes in deciding which channel or combination of channels will best fit his specific needs.

In making his choice, the manufacturer will be influenced by some marketing factors already familiar to us. A prime consid-

eration would concern a) the nature of the product. Is it a consumer item, an industrial item, or an agricultural item? Does it fall into the convenience classification or into the shopping or specialty classification? Are other special characteristics, such as perishability or frequent service adjustment, involved? A second important consideration would concern b) the volume of product to be moved. Will a relatively large volume be available over which to spread necessary costs of distribution? If so, the manufacturer can arrange to have the various functions of distribution performed in a more highly specialized manner with particular emphasis upon the specialized needs of this product. A third important consideration would concern c) the nature of the market. What are the geographical characteristics of the intended market? Are customers concentrated or scattered within the geographical market? Are potential customers easily separated from the population at large? What are consumer buying habits with reference to this product? Do they regard it as a convenience item to be picked up at the neighborhood store? Or is it a shopping item that is selected only after comparisons have been made at several competitive stores?

Some manufacturers appear to have solved their selection problems in simple fashion by producing items for sale to distributors who use their own private brands in the later marketing process. Once such a manufacturer delivers his product to the wholesaler, retail chain, department store, or other large outlet, he discharges all obligation for further distribution of his output. He receives a price that covers normal costs of manufacturing unbranded merchandise in that industry—and usually little more. In this situation, both the costs of and the returns for ultimate sale of the items as branded merchandise are taken over by the distributors themselves. Under certain conditions, this arrangement may be judged highly satisfactory to the manufacturer. He reaps his reward for his own specialty—manufacturing—and leaves to the distributors the problems of distribution. Comparison might be made with the miller who "hedges" through simultaneous purchase of grain and sale of grain "futures," so as to make his business strictly that of milling flour, rather than that of milling flour and of speculating in the commodity markets to the extent of his inventory as well. On the other hand, the marketing of the manufacturer's product is "half the battle." It is not merely incidental to the production process in the eyes of the management of the average independent business firm. Most business executives are anxious to keep in close contact with the ultimate consumers of their product.

Some manufacturers go to the other extreme by distributing their output directly to the consumer through their own salesmen. Such an operation requires an extensive distribution organization indeed if the item in question is other than a highly specialized, industrial-use product. If company salesmen were to sell convenience items directly to consumers, literally thousands of salesmen would be required to dispose of the output of a medium-size plant. Each salesman would have to be paid at least a minimum "living wage." In addition, a sizeable record-keeping problem and a difficult supervisory problem would confront the manufacturer. The inventory, warehousing, transportation, financing, and selling problems involved in such an operation would be unusually complex. The manufacturer would have to market a rather full product line in order to achieve economic unit sales. The extensiveness of the product line handled would itself add to the complexity of the total problem.

A manufacturer will ordinarily "be his own retailing and wholesaling expert," or rather, perform these vital functions himself, only if he can clearly do a better all-around job of distributing his products himself, rather than entrusting them to others. It will be remembered that both the retailer and the wholesaler customarily carry many times the number of varieties of products that a single manufacturer produces.

These middlemen are thus able to spread their costs of distribution within a given market over a great number of different products. A manufacturing firm that is not itself an integrated wholesale and retail chain organization might not be able to spread distribution costs sufficiently to compete with other organizations performing similar marketing functions. In such case, the manufacturer might be well advised to sell his output to middlemen at trade discounts for distribution to consumers through their own marketing organizations.

In some instances, special considerations lead manufacturers to be their own distributors for particularly cogent reasons. A local dairy that distributes milk door-to-door, as well as to retail stores, can usually do so successfully, in large part, because of the controlling importance of freshness in milk distribution. Moreover, producers of such items as milk or bread operate on a local or regional scale. This limited market can be cultivated intensively by the producer without his becoming bogged down at central headquarters in a mass of administrative details.

Some manufacturers sell their wares successfully by using house-to-house calls. Their number is progressively declining as retail competition in urban areas becomes increasingly effective. When home demonstration of the product might facilitate a sale, as has sometimes been the case with brushes, aluminum ware, vacuum cleaners, and even hosiery, door-to-door selling can be considered an alternative channel of distribution. The difficulties encountered by salesmen in finding the customer at home, gaining entry, getting the customer in a mood to buy, delivering the goods, minimizing sales returns, and obtaining payment are impressive indeed. From the manufacturer's point of view, the task of training canvassing crews to perform these arduous sales tasks at a commission, which will yield the firm a better net return than would distribution through wholesale and/or retail channels, is also challenging—particularly if the product itself is reputable.

Even if a manufacturer decides to sell through middlemen, his decision-making responsibilities are not thereby ended. He must still decide such questions as the following:

a. Shall he develop his own sales force to sell to middlemen or shall he sell his product through brokers?
b. Shall he sell to wholesalers or directly to retailers?
c. Shall he sell to mixed channels, *e.g.*, both to wholesalers and to large retailers?
d. What discounts shall he offer to the trade in planning 1) manufacturer's price, 2) wholesaler's price, and 3) retailer's price?
e. Shall he finance his middlemen or shall he sell strictly for cash?

The same basic approach used earlier in these marketing chapters could be applied to these issues. Essentially, our reasoning process would involve 1) visualization of the central problem at issue, 2) recognition of major factors that might have bearing upon the case, 3) determination of the specific facts in this case, 4) a weighing of the evidence pro and con, 5) consideration of the implications of various factors for other interrelated factors in this case, and 6) formulation of a plan of action appropriate to the case.

One of the heartening aspects of business administration, in the marketing field or elsewhere, is the multiplicity of actions that might prove workable in a given case situation. There is, ordinarily, no single "right" or "wrong" course of action, although there most assuredly are "good" and "poor" analyses of problem situations. An alert business administrator might knowingly select a course of action counter to the general trend. By consistent application of a comprehensive plan, the administrator might guide his organization from where it now is to where he wants it to go, following a little-used alternative route, which, in this case, happens to lead to the same desired goal.

A ship's captain does not attempt to work out his detailed navigational moves for a contemplated cruise 100 per cent in ad-

vance, although he might conceivably do so by predicting currents, wind direction, wind velocity, and other variables, such as the net effect of chance encounters with other vessels, during each day. Neither does the captain follow, without deviation, the exact course which others took earlier under different sailing conditions. The ship's chief executive, like the business executive, is a practitioner of the case method. He plans his course of action in advance, aiming to achieve whatever degree of accuracy he believes will prove economic and profitable under the circumstances of the voyage. He engages a competent man to fill the position of navigator. He provides the navigator with the necessary tools with which to perform his job. The captain coordinates the actions of the navigator with those of other members of the crew. He controls the entire organization in the performance of its assigned tasks. Upon determining the facts in a given navigational situation, the ship's captain adjusts his course of action to fit the situation with which he is actually confronted. A trim craft under able command possesses the valued ability to veer right or left, or even to reverse engines, as conditions change, as well as an obvious ability to plow straight ahead.

3. MAKE-UP OF THE PRODUCT LINE

Decisions concerning the make-up of a product line call for the exercise of marketing judgment of a high order. A complex of relative values comes up for investigation before sound decisions can be made. The values involved are relative, to an extreme. On numerous occasions, major factors entering into the situation are in direct conflict with one another. Decisions as to the make-up of a product line are closely related to considerations falling under areas 1 and 2 above, concerning types of products to be marketed and channels of distribution to be used. Such decisions involve number and variety of products, of styles, of designs, and of quality levels. Product-line considerations oftentimes have a strong merchandising tie-in. In areas 1 and 2, we tended to make the single product our frame of reference. We shall now investigate the manner in which related products may be fitted successfully into a comprehensive product line.

At the very outset, the organizers of a firm are called upon to decide the number of product lines and the number of major products within a product line that will be produced and marketed by the new organization. Such a decision might well range from a) the single product approach, as might be the case with the inventor of a new gadget, through b) the main product line, plus by-products approach, as with meat-packing firms, to c) the multiple product-lines approach, as with giant firms, such as G.E., G.M., or DuPont.

Throughout the life-span of the firm, management will be faced with decisions as to whether it is advisable to add to the line in an effort to add to volume or whether it is advisable to seek profits by concentrating upon efficient handling of the existing product line. Temptations to add to the line are particularly strong. A firm that is expanding rapidly by branching out in new directions creates new executive posts carrying major responsibilities. These posts are often filled through promotion from within. Existing executive jobs are upgraded as well, through addition of new duties. A close, hard look should be given to any such proposals, however, as hidden pitfalls may well be present. A firm seeking to expand its product line should ask whether or not the proposed new varieties are likely to outstrip the results that could be obtained if equivalent effort were devoted to the improvement of existing items. Other discerning questions include the following: Will the new product utilize our existing channels of distribution? Are our potential customers essentially different from our present customers? May our firm's marketing policies remain unchanged or is a new sales approach, advertising approach, or pricing policy involved? Decisions ar-

rived at for these and other interrelated issues help to clarify the basic course of action management should follow.

Considerations pointing toward successful expansion of the product line include the following:

a. When intensive effort applied to the existing product line still fails to utilize adequately the full resources of the organization, including men, machines, and money, a new product, carefully selected to blend with the firm's existing needs and resources, may be added.

b. A marked seasonal fluctuation inherent in existing products makes it desirable that a firm add to its line a product whose seasonal demand complements existing demand. Well-known illustrations of this type include coal and ice, electric heaters and fans, and ice skates and roller skates.

c. In certain instances, a firm may seek to add to its line products that tend to differ along cyclical lines from its existing products. G.E.'s expansion from the apparatus field into the appliances field would be a case in point. Low-price and high-price models within a given product line also tend to follow contrasting sales patterns during the course of the business cycle.

d. A firm may feel compelled to market certain products that are related to its main line in order to attract and maintain the type of dealer that it requires for its main line. The close tie-in between radio-TV distribution and refrigerator distribution stems, in part, from the desire of individual firms to match competitors who happened to market both radios and refrigerators under the same brand name. In many instances, dealers exert pressure on a company to market a full line of goods so that they may capitalize upon their investment in brand-name promotion.

e. A firm may feel compelled to market a complete line of goods in order to conform with consumer buying habits. In some instances, the consumer expects the dealer to stock a full assortment of related items, such as electrical or plumbing supplies. The customer would cease to patronize the dealer if he felt that the dealer's stock in a given line was not reasonably complete.

f. In some situations, customers purchase only a small quantity of any one type of product, such as dental supplies. Salesmen calling upon these customers carry a wide assortment of products in order to achieve an economic sales unit, despite the limited potential for any one item in the line.

Even when cogent arguments appear to exist for expansion of a product line, policy-makers within the firm would be well advised to keep in mind, or make provision to overcome, the following possible drawbacks:

a. It is usually difficult for management to supervise adequately the many, varied activities required in the production and distribution of large numbers of different products. Executive time devoted to the establishment of a new product may be time that could ill be spared from the supervision of other complex activities of the firm.

b. Salesmen also have a limited span of effectiveness. If the product line becomes unmanageable in point of coverage, company salesmen may tend to stress a few products, while omitting mention of a great many others. If the selling task required becomes excessive, salesmen may compensate by becoming mere order-takers, rather than aggressive sales representatives. If this change in selling procedures were to occur, the new product would not have accomplished the purpose for which it was added to the company line.

c. Production men cannot achieve the full economies of integrated mass production if the number of different products that must be turned out within a given plant is increased by any significant quantity. Detailed operation sequences and other production requirements for varying designs, styles, sizes, and kinds of products tend to require individualized handling for each production lot. A great deal of "tooling up" time is involved in switching equipment from one task to another. Frictional wastes

tend to increase almost in geometric proportion, as the number of production-control variables increases. This nonproductive expense becomes an increasingly significant portion of total cost, as lot size of individual runs falls off.

d. In some instances, the planned use of machinery for production of several different types of products causes the firm to purchase more general purpose and less special purpose machinery, with the result that unit cost on work actually performed tends to be higher than it otherwise might be.

e. The operating personnel of a firm cannot be held as rigidly to performance standards if the products on which they work are varied in nature and if the quality specifications for various types of products differ widely. Production objectives tend to become confused under such circumstances, and the organization itself tends to lose its distinctiveness.

Each product-line decision should be based upon the merits of the individual situation. The above considerations serve only in the role of thought-stimulating guides. It may be noted that reasons for not expanding a product line may possibly be valid reasons for contracting an existing product line if they are particularly cogent. It is especially difficult to contract the scope of operations of a going concern. Such a move involves reshuffling within the organization. It takes certain activities away from specific executives. It may involve termination of employment for certain specialized personnel. Many administrators tend to cling to the accustomed way of operating under such circumstances, rather than to face up to needed change.

4. *PRICING POLICY*

We briefly discussed pricing policy for the individual product in area 1. At that time, we asked how prices are set under normal competitive conditions, under depressed market conditions, and under conditions in which one firm enjoys a marked quality advantage over its competitors. In this current section, we shall consider broad pricing policies and practices which are employed by the institutions that comprise our business economy.

A price, in the economic sense, is the money that an article or a service can command in the market. In broad terms, it is the measure of the exchange value of this article or service, in relation to all other articles or services. Businessmen, in general, may be assumed to have the intention of setting prices for goods and services at levels that will yield them an optimum return. If their calculations were to prove sound, businessmen would, through this method, presumably maximize both their own *long-run* profits and their own *long-run* service to other persons sharing in the economy.

When we shift from economic theory to actual business practice, we find a great variety of prices charged not only for the same product in different markets, but even for the same product in the same market. Manufacturers and other producers charge one level of prices to wholesalers who buy their output in large-lot sizes at the source of production. Wholesalers, in turn, sell smaller quantities to retailers at markups ranging from one-fifth to one-half or more of the manufacturer's sales price. Retailers also markup their prices by amounts ranging characteristically from one-fourth to one-half or more of the wholesale price, so as to provide an adequate gross margin and net profit for their own business services. We are already familiar with the functions performed by the various middlemen from our studies in chapter 12.

In some instances, a manufacturer, wholesaler, or retailer will charge different prices to different customers for the same basic product. This practice may usually be harmonized with the "one-price policy," which has wide acceptance with American consumers. If a buyer will purchase in large volume, the seller usually finds it advantageous to offer him a quantity discount, so as to secure his trade. Other buyers who

fall into distinct categories may also be accorded discounts. Employees of the firm, clergymen, and nonprofit institutions are sometimes placed in a preferred category for pricing purposes. Discounts for paying cash, for cash-and-carry, and for trade-in deals are frequently of such magnitude as to contain an element of price discount, as well as an element of adjustment for differences in services required.

On many occasions, all customers benefit equally from variations in the pricing policy of the firm. Retail stores periodically feature "special events" or sales, at which numerous items are marked down to encourage high volume turnover or to liquidate excess inventory. In some cases, only "loss leaders" are marked down. Such items serve to attract the customer to the store where it is hoped that other sales appeals may prove effective as well.

Many prices prove to be highly resistant to change. The standard price for chewing gum, candy, and soft drinks tends to remain 5 cents, under a great variety of cost conditions. The size of the stick, bar, or bottle is more flexible than the price of the product. Some stores may feature such items on the counter at "three for a dime" or at "6 for a quarter." The customary or convenient price of the product is still regarded as the 5-cent figure, despite these occasional deviations for the purpose of stimulating volume of sales.

Another type of standard price is that characteristically found in certain benchmark positions within a product line. Small washing machines may sell at $59.50 or $69.50, for instance, while full-size models may sell for $159, $179, or $199. Both middlemen and consumers become accustomed to these price figures, and attribute definite characteristics to items priced at the low, medium, and high benchmark points within a product line. When manufacturers design models to occupy various positions in their price line, they build in some variations that can be pointed to as the "reason" for the price differentials. Usually the manufacturer's main motivation is that of tapping different segments of the market at different price levels. The differential cost of the various models in the price line is oftentimes inconsequential.

In an increasing number of fields, the traditional concept of a market price set by the interaction of large numbers of buyers and sellers does not apply. Competition cannot be relied upon as an automatic price regulator in the public-utility field or in many aspects of the transportation field. Any attempt to enforce all-out competition in fields correctly labeled "natural monopolies" would be disastrous for the firms engaged in resulting price wars. It would be wasteful of our natural resources as well. Government regulation of rates is the accepted substitute both for all-out price competition and for uncontrolled monopoly in the utility field. In recent decades, the government has entered into the agricultural-products pricing field. Government subsidies have been paid to farmers who are willing to cooperate in the attainment of price and volume goals indirectly set by government planners. The National Industrial Recovery Act of 1933 (N.I.R.A. or N.R.A.) spread this broad-control philosophy to the business and industrial fields for a limited time. World War II and the Korean Crisis each led to the imposition of price ceilings designed to restrain the forces of inflation on the home front.

Two other legislative measures have had broad effects in the pricing field. They are the Robinson-Patman Act of 1936, regulating discounts for quantity purchases, and the so-called "fair trade" acts, legalizing minimum resale price fixing within the 46 states that passed said acts. The Robinson-Patman Act was passed by Congress in an effort to help small, independent businessmen in their competitive struggle with large business units, particularly retail chains. This act endeavors to limit quantity discounts to "savings" that the additional volume actually makes possible. Price discriminations between purchasers of the

same grade and quantities of goods were banned. Formerly, large business units had been able to exercise their bargaining power without restraint, and so-called "quantity discounts" obtained by them oftentimes represented sizeable donations by manufacturers of normal operating income. Large units were sometimes able to use the cost advantage obtained through superior bargaining power in their campaign to drive small competitors out of business. The act has been difficult to enforce at times, but, in general, it has curtailed extreme instances of unfair discrimination.

The "fair trade" acts, which were passed by 46 states during the 1930's and 1940's, at the instigation of small, independent businessmen, provided for a legal contract between manufacturer and middleman for the fixing of resale prices. Moreover, throughout the '30's and '40's it was believed that, once the manufacturer and a single distributor had signed such a contract, all other dealers were automatically made parties to the contract and bound by its terms. Through this method, the minimum legal price to the consumer of numerous branded and trademarked items was kept at artificially high levels. In 1951, the U.S. Supreme Court nullified those portions of "fair trade" agreements between manufacturers and distributors that bound other firms that had not signed said contracts to abide by them. This decision effectively removed the heart from all "fair trade" acts. In a number of cities throughout the nation, mild price wars followed with respect to heretofore "fair traded" items. The heavy demand for consumer goods, relative to supply that existed within the economy at the time, greatly reduced any incentive for distributors to reduce over-the-counter prices generally. Price ceilings were more topical at the time than price floors. Legislation passed by the 82nd Congress in 1952 restored "fair trade" agreements substantially to the status that they enjoyed prior to the U.S. Supreme Court decision.

5. SALES APPROACH TO BE STRESSED

The manufacturer marketing his product line, the retailer operating his store, and the salesman canvassing his territory all have a common problem of determining what sales appeals to feature in persuading customers to patronize them, rather than their competitors. We have already touched upon various types of sales appeals in chapter 12. It will be helpful to list various ones together at this time, however, so that their interrelationships will tend to stand out. Commonly used sales appeals include the following:

a. The *price* is right in relation to quality and in relation to prices quoted by competitors.

b. The *quality* 1) is above reproach functionally, 2) is unusually high, either within its price range or in the absolute, and 3) is better than that afforded by competitors.

c. The *reputation* of the firm assures the customer that his expectations will be met in full and that any shortcomings will be made good.

d. The *service* offered by the firm is ample, appropriate, competent, and timely. The firm outdoes its competitors in willingness and ability to provide services to the consumer.

e. The *design and style* of this product are eminently satisfactory, are in keeping with current and future trends, and lend the product an air of distinctiveness.

f. The *salesmen* are able and personable representatives of a reputable firm. They are selling a product and a service to the customer that will prove mutually beneficial.

g. Merchandise is offered on *easy credit terms* without unnecessary "red tape," and the product may be used while it is being paid for.

ILLUSTRATIVE CASE A

"Merchandising Your National Advertising"

with Sam L. Scheer
District Representative, Philco Corporation

Mr. Sam L. Scheer of Syracuse, New York, has served as Philco district representative in New England and New York State for a goodly number of years. Sam and his

family are Syracuse residents. Thus, Sam knows his Philco products and sales district equally well.

A Philco district sales representative has several wholesale distributors with exclusive territories and hundreds of retail dealers, who are actively selling radios, TV sets, refrigerators, freezers, air conditioners, electric ranges, and other Philco product lines, within his district. The representative has a large degree of autonomy in the promotion of sales within his district. His company may ask him to accept a sales quota of perhaps $12–15 million annually. He and the wholesale dealers or distributors within the district are given wide discretion, within

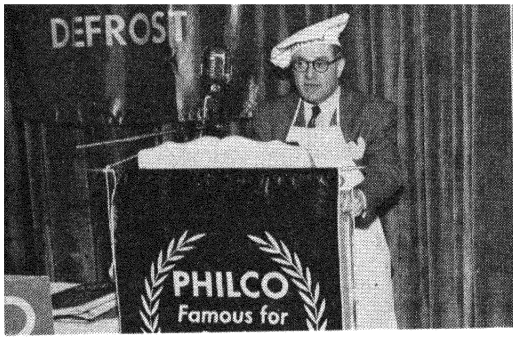


Figure 13-2: Sam L. Scheer addresses a Philco dealer meeting. (*Philco Corporation*)

limits, in the manner in which they market Philco products. They decide whether or not to grant exclusive sales rights to dealers, for instance, within various portions of the district. They set up specific sales territories for coverage by Philco wholesale salesmen.

The representative working out of Syracuse reports to a division manager with headquarters in Cleveland. This manager supervises the activities of district men paralleling Sam Scheer in Rochester and Cleveland. The division manager reports in turn to a regional sales manager with headquarters in Cleveland who has several divisions under his jurisdiction. The top Philco sales staff is composed also of product sales managers and divisional vice presidents in charge of sales.

Several times during the year, Sam Scheer holds, with his distributors, a series of dealer meetings in order to cover Philco merchandising plans for new product lines or promotional plans for current lines. Advertising, sales promotion, and merchandising activities are thoroughly discussed at such meetings. The following comments from an address entitled "Merchandising Your National Advertising," delivered by Scheer before the Syracuse University Chapter of the American Marketing Association in March 1951, illustrate the tenor of the sales talks that he presents at periodic "pep and planning" meetings:

I am somewhat concerned about the rather pompous title of this simple "pitch," "Merchandising Your National Advertising!" It seems to imply that I am an expert, which I am not. As a salesman, I rightfully take advantage of every legitimate means to increase my sales. These are the things I do and say to induce my retail dealer customers to do likewise. There is nothing new or revolutionary in my remarks. I believe it was Voltaire that said, quote: "Originality is nothing but judicious imitation."

They say that monkeys have more fun than anybody! Why? Well, maybe there are more monkeys, and monkeys have more time to play. They don't have to work for a living. But I contend that if, as the experts tell us, most of our waking hours are wrapped up with our work, then it's important to get fun out of our jobs! And, there's no more fun in my estimation than advertising, promotion, and merchandising.

We recently held a number of dealer meetings in my Philco areas announcing new television, refrigerator, electric range, and air conditioning models for the 1951 season. We outlined the over-all advertising, promotion, and sales plans. These covered sales training schools, cooking schools, Philco live store demonstration centers, point of sales display, billboards, local newspaper campaigns, radio and TV advertising, the national magazine campaign, national radio and TV shows, and many other merchandising aids too numerous to mention.

I pointed up the fact that competition talked about fancy budgets for 1950. Philco spent 28 millions of dollars on all advertising and pro-

motion in the year just past. It was wise budgeting and every dollar was based on sales volume to the tune of $335,000,000. In this connection, it is interesting to note that Philco's advertising and promotional expenditures for 1950 were just under our total for all sales in 1934.

It certainly paid Philco to advertise, to use an old bromide. Our wholesale salesmen sell advertising and promotions with the same enthusiasm as they sell merchandise. I called on a dealer the other day with one of our wholesale men. He had an advertising promotional campaign to sell, a series of personal endorsement ads. Not an easy campaign to sell ordinarily. In getting the idea over to the dealer that it pays him to advertise, he said that "there are some 26 mountains in Colorado higher than Pike's Peak." . . . The dealer got the point.

Our plans for 1951 advertising and promotion are just as vigorous as last year, and then some. It was pointed out that to get the utmost out of this terrific program, it is vital that our dealers merchandise the national advertising we hand them on a silver platter. Three-quarters of tomorrow's volume will come, not from merchandise advertised today, but from the ads of yesterday and the public acceptance they have built up for dealers' stores, and by the dealers' planned tie-ins with these multimillion dollar advertising programs. Advertising delivers the maximum help to those retailers who use its sales building power.

Some merchants seem to think that sales promotion starts and stops with the magazine, newspaper, radio or television advertisements. These media must be backed up in every way if real sales promotion is to be achieved.

We know that people cannot buy what they never heard of, and they won't be impelled to buy what they cannot see. We hear the words "advertising," "promotion," and "merchandising" every day. How shall we define those catch-all terms? Well let's try. National advertising is the super-charger that pre-heats the prospect. It's everything that tends to pull the prospect toward the product. It's the art of creating a desire on the part of the public. It's directed to a mass audience.

Sales promotion feeds the fuel. It's everything that tends to push the product towards the consumer, and is the art of advertising directly to an individual prospect. Where does merchandising come in? Well, in my humble opinion, it's merely a composite knowledge and use, know-how if you please, of advertising, promotion, and retail selling that makes a good merchandiser.

Advertising must be continuous. Advertising doesn't jerk; it pulls. It was John Wanamaker that said, "A quitter should never be an advertiser. To make a success of advertising, you have to stick to it." You have to be prepared to spend dollars. Results don't come overnight. Advertising doesn't jerk; it pulls! It increases in pulling power day by day and year by year until it becomes an irresistible power! There are two ways to make advertising pay: 1) keep at it and tie your name and the merchandise you sell in with the million dollar stars. Association of your store name with the multimillion dollar advertisers is cheap advertising. You virtually become a partner of big business, matching dollars against millions. 2) Promote and merchandise your local, and particularly your national, advertising. But keep advertising. Hammer home in your customer's mind the association between the national ads they see and the fact that they can buy that product at your store.

Memories are short. Keep advertising. Remember you have to "tell 'em . . . to sell 'em," and you have to tell 'em continuously . . . to continue to sell 'em.

Now I am going to ask you to imagine, if you will, that you are a group of Philco dealers attending our new line merchandise meeting. From here on I am going to step off into the "pitch" I made at these dealer meetings I spoke of previously.

In asking you to merchandise your national advertising, remember, there is no magic in advertising that will overcome the absence of merchandising. Your show windows are for "stopping passers by . . . from passing by!" Advertising is the spring that makes your merchandise move to your customers. National advertising is delivered to at least one out of five families in the community where a retail store is located. Philco does far better than that. Advertising will work for the dealer, if the dealer will work with advertising.

Consumers who read Philco advertising in magazines, who listen to the great Philco radio broadcasts, and who view the Philco playhouse shows on TV, are not directed where to buy the product. Whose advertising is it? It belongs to those dealers who tell their customers "where to buy," when Philco tells them "what

to buy." The way to use this selling power is to move your Philco merchandise towards your customers when Philco advertising moves the customers towards your Philco merchandise.

You can do this with:

1. Mass display of Philco merchandise in your window and on your floor when Philco national advertising appears, and that is practically constantly.

2. Use of our Philco national dealer window and store display service, Philco floor and specialized counter displays, and promotional material.

3. Newspaper advertising, radio advertising, television, spot announcements, handbills, billboards, stuffers, and so forth.

These reminders of where to buy the Philco product will bring more customers into your store and sell more Philco merchandise for you.

Most dealers take the terrific Philco national advertising program for granted. I don't know if you have ever asked yourself this question: "How many of my customers will see the Philco advertising and perhaps be influenced to buy that product in my store?" That question should interest you!

Has this ever happened to you? You're dressing in a hurry in the morning. Your shoe string breaks so you "cuss" and tie a knot in it and make a mental reservation to remember to buy some laces downtown. That's the buying impulse! . . . You walked past dozens of shoe stores, but you weren't thinking about shoe strings. As no store window massed a reminder for you, you completely forgot. . . . That night, taking your shoes off, you had to struggle with that knot, and said, "Darn it, I forgot." . . . But the fact is you hadn't been reminded of your buying impulse. But the next day you stepped up for a shine. The bootblack had a display of shoe laces. You said, "Shine and new laces, boy." You got that reminder at the point of purchase, and the point I want to make is that a display of laces, a copy of a national ad, or a window card in any of the shoe stores passed the previous day would have sold you those shoe laces the first day on the first buying impulse.

National advertising "breaks the shoe strings" for you, and a dealer turns those "buying impulses" into sales in direct ratio to the manner in which he supplies what the bootblack supplied at the time the shoe strings are broken. Get the people into your stores. . . . Use the "traffic magnets" that are super magnetized by powerful national advertising . . . Philco merchandise. Make full use of your Philco display service at the point of first consumer contact, your window! Cut out fresh, up-to-the-minute national full-page spreads from the *Saturday Evening Post*, *Colliers*, *Time*, *Life*, and dozens of other publications. Keep them posted in your windows. These, together with a live mass display of Philco merchandise in your windows during the week following publication of the advertisement, supply the most effective reminders a dealer can use. No other reminder at the point of consumer purchase reawakens so many buying impulses. . . .

Window displays have only one purpose . . . to induce passers-by not to pass by! Passers-by become customers when old friends invite them in. Multi-millions of Philco sales advertising impacts make Philco an old friend to the buying public. Windows, if human, would fairly scream, "Wanted for this window: merchandise which says, 'We are old friends. Come in.' Many dealers forget this when they select merchandise to display in their windows. What do they display? Check some windows and see. You will find that too often the merchandise displayed is merchandise the dealer wants to sell, which is exactly like going fishing and baiting your hook with something you like to eat. That isn't exactly the way to catch fish.

Take a look at a Deisel-powered streamliner. All the cars look very much alike, but they are not all alike. Only the front car carries a power plant! Power to move itself and power to pull other cars along with it! Items on a retailer's floor may also look very much alike, but only the well advertised line carries a power plant. This power will help move other merchandise too, if the retailer will use it wisely.

Let's make a perfectly simple analysis: You're in business for profit! Profit depends on sales! Sales depend on store traffic! Store traffic depends on advertising and promotion! National advertising is the greatest "free ride" in business, and you're fishing for business. But let's carry this a bit further. Let us suppose a law has been passed forbidding all window displays. Improbable perhaps, but who can tell what laws will be passed now-a-days. So the only way you can induce passers-by not to pass by is to hire someone to stand in front of your store and invite them in. You could have hired this man (show audience a picture). Do you know who he is? . . . You don't know? Well, I'll tell you. His name was W. A. Julian. Now

do you know who he is? No? I'll tell you. He was Treasurer of the United States for many, many years. He was tops in business ability, but, if he stood in front of your store and invited people in, wouldn't most of the "passers-by" keep right on "passing by"? Your unadvertised merchandise might look pretty good, but if they are not known to the passers-by, they haven't got what it takes to stop traffic.

Here is a dollar bill. Every dollar bill printed during his long tenure of office before his death, every five, ten, twenty, every bill, carried Mr. Julian's signature right in front of your eyes many times a day. Hundreds of millions of line mentions, but you didn't recognize either the "brand name" or the "package." (Show picture.) He has never been advertised! Here is a bill signed by his successor. Do you know the name? Well, it's Georgia Neese Clark. I'm certain you wouldn't recognize her photo either, for the same reason. You can figure that one out better than I can, as applied to the "reminder value" of little known or unadvertised products in store windows. The windows of your store are the windows of your advertisements.

But suppose you hired this man (show picture) to stand in front of your store and ask "passers-by" not to "pass by," but to turn and walk into your store. You know what would happen. You would have to call out the police to handle the crowds. Everybody knows Clark Gable! What you put in the windows of your store and the windows of your ads is the man you hire to stand out in front and invite people into your store. Surely good judgment dictates the use of the nationally known and accepted products, Philco merchandise!

Dollar volume depends on customers, and remember too that dollars, not percentages, meet the pay roll and pay the rent. Yesterday's good advertising is today's good reputation. The good reputation of merchandise bought in a store is the surest guarantee against loss of customers, the surest of all guarantees for quick, satisfied sales, repeat sales, faster turnover, and profit.

It has been said that advertising cannot produce maximum results unless the dealers who sell nationally advertised products will "act as overseers who, by their constant vigilance in the stores, make it easier for the national advertising to do the work for them. Endorse national advertising by merchandising these multi-million dollar expenditures. . . .

In closing I want to tell you a little story about a play. It was called "Lightnin'." Many of you may remember that grand old actor, Frank Bacon, who played the part of "Lightnin'." He was an old Civil War veteran, slow, shiftless, though shrewd and lovable. His wife and daughter paid little attention to him. Some land they owned was wanted by a sharpshooting city realtor. Lightnin', slow but shrewd, saw through the deal and didn't want to sell. But his wife, in whose name the property was held, fell for the slick sales talk and sold the property.

In the final scene, Lightnin' stands alone on the stage. He's on the verge of tears, shoulders hunched, head sagging. He sees his life savings swept away. It was a dramatic moment. Not a word. Not a sound. You could hear a pin drop in the theatre. The house was charged with the drama of the situation. And just when you think your emotions will burst within you, the tension is broken by the postman's whistle.

"A letter for Lightnin'," he announced. Lightnin' takes the letter, hands quivering, opens it, takes out a slip of paper and mutters. "Humph! Civil War pension check from the United States Government." He sees the signatures, turns it over and reads, "To be endorsed by:" Suddenly he straightens up, shoulders back, the old light shining in his tired eyes once more. You can almost feel the old fellow hearing the drum and fife corps of the '60's once again.

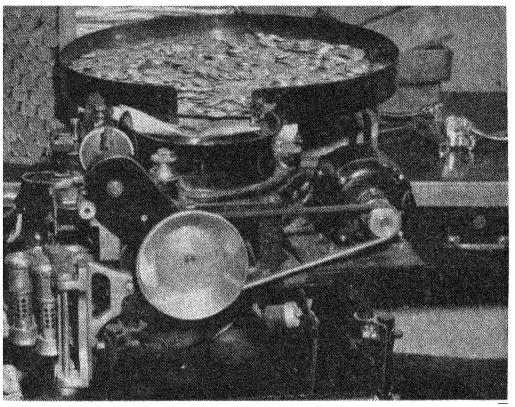
With a smile on his face he looks at the check again and says: "Signed by the Treasurer of these United States, and countersigned by the President of the United States. . . . But it ain't worth a good gosh darn . . . until it's endorsed by old Lightnin'!"

[Note: An illustrative case on Marketing and Advertising problems of the Electronics Department of the General Electric Company is presented in Case Section C.]

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	250–254	Why is it customarily deemed advisable for a manufacturer to relate his contemplated marketing actions in a given case situation to broader marketing policies and plans that do not relate specifically to this given case?
2	250–254	Why is it sometimes inadvisable for a firm a) to place its main reliance upon "trial-and-error" product combinations over a period of time, and then b) to endeavor to establish a permanent product line that will not expand or contract?
3	252	Although granting that "quality is seldom, if ever, present in the absolute," can you set forth some situations in which "near-exceptions" may help to prove the rule?
4	252–253	In time of peace and normalcy, if a single pricing creed were to be adopted by American industrialists for application to the great bulk of private industry, would you favor a) a slogan calling for "rational pricing upon a cost-plus-fixed-fee basis" or b) a slogan calling for "charging what the market will bear"? Alternatively, would you advocate some "middle way"? Explain.
5	253–257	Why, in your opinion, do manufacturers spend large sums of money for the gathering of descriptive and statistical data detailing the specific nature of the "market" for their product line?
6	257–259	Can you visualize situations in which a) the sales department might advocate and the production department might oppose expansion of the product line, and b) the sales department might oppose and the production department might advocate expansion of the product line?
7	259–261	How many different prices might you expect to find paid by various categories of buyers for a clock-radio that has been marketed in accordance with a "one-price policy"? Explain.
8	260–261	In your opinion, should the small businessman be aided in his competitive struggle with large business units by such legislative acts as the Robinson-Patman Act and the so-called "fair trade" acts? Explain the criteria that you use in arriving at an opinion on this matter.
9	261	Illustrate interrelationships that might exist among sales appeals that stress the following product features: price, quality, reputation of the firm, service offered, design and style, personal attributes of salesmen, and easy credit terms?
10	261–265	What role should retail-dealer merchandising play in an aggressive, well-coordinated retail sales operation?

14 Financial Management: Policies and Procedures



THE SUBJECT AREA OF FINANCE IS not entirely new to us at this stage in our reading. In chapter 3, the financial boom of the '20's and bust of the '30's made headline news. The topics of war finance and inflation control during the '40's also were newsworthy. In chapter 4, G.E.'s original promotion of the R.C.A. enterprise, the distribution of R.C.A. securities, and the nature of R.C.A.'s fixed- and working-capital problems during various phases of its growth and development were brought out. In chapter 5, the financial policies of and financial controls exercised by capitalism, communism, fascism, and socialism were seen to reach to the very heart of these various economic systems. The discussion of G.E.'s Electronics Park plant and equipment in chapter 7 dealt with facts, figures, and concepts that were rooted in the area of finance. The legal organization of the business unit (the subject matter of chapter 8) is an important phase of finance, as well as of business law. Corporate organization and control by officers, directors, and stockholders were also covered at that time.

Photograph at top of page: Twelve coin wrapping machines at the Chase National Bank wrap over 250 million coins annually, averaging five tons daily. (*The Chase National Bank*)

In this current chapter, we may focus attention upon such topics as 1) the "role" of finance, 2) corporate securities, 3) the capital market, 4) other financial institutions, 5) valuation and capitalization, 6) fixed capital, 7) working capital, 8) income and dividends, 9) financial analysis, 10) business risks and insurance, and 11) business failure and reorganization.

1. THE "ROLE" OF FINANCE

The prime role of finance in business is to amass and administer capital so that the activities of business administration may be carried on. We noted in chapters 5, 7, 9, and 12 that "roundaboutness" characterizes modern production and distribution methods. When business activities are conducted on a large scale, the time that elapses between "tooling up" and consumption characteristically is increased, even though the average cost of each unit turned out is decreased. For example, nearly half a decade elapsed before the decision to construct Electronics Park could be translated into TV sets rolling off the line. Hand-made models, on the other hand, could have been turned out within a few months. Once the large-scale, plant-construction project was decided upon, a sizeable investment of cap-

ital funds over a long period of time was a foregone conclusion. Even before the first brick was laid, a great many financial obligations had long since been incurred. For one thing, the salaries of the G.E. planners had to be met. These planners included the top G.E. staff executives, who set broad policy; the site selection committee, which considered scores of possible locations; the architects and engineers, who spent more than a year over their drawing boards; and other G.E. officials who participated in the letting of construction contracts. Throughout the construction period, G.E. funds, drawn from previous stock issues, previous earnings, postwar expansion reserve funds, and bank notes, were used to pay for materials, machines, and men. Even after the physical plant itself was complete, many additional "red ink" months elapsed before operations reached a profitable level. For a number of years thereafter, more new money was poured into the G.E. Electronics Department to meet expanding plant, machinery, and working capital needs than came out of the department in the form of profit. It may readily be seen that finance played a prime role in this broad, large-scale business operation.

It is not enough merely to amass the requisite quantity of capital. The financial officers of an organization have the task of amassing these funds in a smooth and efficient manner, with due regard to appropriate sequence and timing of moves. They are expected to obtain these funds economically, from the points of view both of the owners of the firm and of other members of society. The tying up of excessive amounts of capital, much of which must lie idle for a considerable period, is wasteful of the limited capital resources of our economy. The cost of using this capital, whether imputed or out-of-pocket, falls specifically upon the shoulders of stockholders within the firm. Persons lending capital funds also have an interest in their judicious handling. In the long run, the safety of an investment is bound closely to its productive use.

Another important consideration in financial matters is that of protecting the rights of owners within the firm. The successful conduct of the business is, of course, a basic way in which over-all interests may be protected. Other actions of management pertain to the relative rights of various groups having different ownership interests. Stockholders, for instance, have interests that differ significantly in specific ways from those of bondholders and other creditors. Moreover, within each broad group of stockholders and of creditors, different rights and responsibilities may be discerned. Thus, holders of preferred stock are in a different position from holders of common stock. Holders of mortgage bonds are in a different position from holders of debenture bonds. The varying interests of these investor groups should be clearly staked out at the time that the securities are issued, so that misconceptions will not tend to arise. The relative interests of the various groups should also be ministered to equitably by management throughout the life of the capital owners' joint venture in business.

The distribution of income earned is a matter of great moment, just as are the procurement and protection of original capital. The determination of income is in itself a complex matter involving accounting and tax considerations, as well as financial ones. Appropriate reserves and allowances should be built into the cost structure before the residual quantity, which represents income, can correctly be fixed. Decisions as to whether income should be kept within the firm, or whether it may be paid out to shareholders in the form of dividends, frequently involve a balancing of complex financial matters. The dividend policy followed by management may ultimately have far-reaching effects upon the interests of all owner, creditor, employee, and customer groups.

A number of instruments of finance are at the disposal of financial officers. Various financial statements, such as the balance sheet, the income statement, and the budget, will be considered in chapters 15

and 16. Capital instruments, such as stocks and bonds, and other agreements with investors and creditors, will be considered in this chapter. Short-term financial instruments, such as notes and acceptances, also merit our consideration.

The financial institutions that make these various financial instruments available to business form an important segment of business themselves. The investment-banking system plays a key role in bringing the funds of investors into the capital market. The organized securities exchanges, such as the New York Stock Exchange, the New York Curb Exchange, and various local exchanges, are also essential components in our modern financial world. Federal and state regulatory bodies set up to police the actions of these capital-market institutions form a normal part of the fabric of finance themselves, once all parties concerned are adjusted to their presence.

Short-term funds for business are frequently furnished by the commercial-banking system. Commercial banks are willing to supply working capital to business firms with high credit ratings simply upon unsecured promissory notes. In some other situations, secured notes are required. For instance, the pledging or discounting of accounts receivable provides one method of securing a short-term or current loan. Firms that cannot qualify for relatively low-cost bank loans frequently turn to other financial institutions, such as discount houses and finance companies. In these latter institutions, both the risk incurred and the charge rendered are significantly higher than in the case of the commercial bank.

The Federal government should also be listed as an institution whose agencies are playing an increasingly significant role in financial affairs. Government agency participation ranges all the way from over-all fiscal policy control by the Treasury Department and the Board of Governors of the Federal Reserve System to detailed lending to individual firms by the Reconstruction Finance Corporation, to individual farmers through the Farm Credit Administration, and to individual home owners by the Federal Housing Administration.

Financial policies are established by the managers of a firm to serve as guides in dealing with administrative problems involving capital. In their financial aspects, these problems deal with alternative uses, sources, and conservation of capital, and distribution of income resulting from application of capital and other resources. Finance-department officials do not usurp the prerogatives of top-line managers who could, if they so desired, exercise detailed control over the use of funds by the purchasing, production, sales, credit, and other departments. Yet, in order to develop and administer general financial plans for the firm, financial officers must map, in broad outline, the use of capital by various component departments of the firm. If a departmental program later calls for the use of additional capital beyond the limits set by the finance department, management officials should reappraise the situation. Either the departmental plan or the over-all financial plan of the firm must be amended in order to retain consistency in action and control.

The following issues, regarding alternative *uses* of capital, illustrate the nature of problems arising in this field:

a. To what extent should the firm invest additional funds in fixed assets? A committee might review probable long-run return for specific proposals, weighing comparative rate of return against loss of flexibility.

b. To what extent should the firm invest additional funds in inventory? A committee might relate inventory needs for funds to other possible uses of capital. Indulgence in large-scale inventory speculation should normally be suppressed, so as to protect the firm's investment in its main manufacturing line.

c. To what extent should the firm invest additional funds for the extension of credit? The calculation, in this instance, involves the cost of capital, of bad-debt losses, and of handling credit transactions, on the one hand; and the prospects for increased profit from expanded sales, on the other.

The following issues illustrate problems concerning alternative *sources* of capital.

a. To what extent should additional capital be raised from retained profits, and to what extent should borrowing be resorted to with a view to "trading on the equity"? A policy of retaining profits as needed for increased investment might conflict with an equally desirable policy of paying stable dividends.

b. To what extent should additional capital be raised through use of stocks that give ownership rights, but entail no fixed expense, and to what extent should bonds or loans that entail fixed expense be used?

The policies pertinent for adoption by a particular firm depend upon 1) the use to be made of the capital, *e.g.*, short-term versus fixed, 2) the costs of this capital, *e.g.*, original and continuing costs, and 3) rights granted to persons supplying capital, *e.g.*, voting rights, purchase rights, and so forth.

The following illustrative issues regarding *conservation* of capital may be cited:

a. To what extent should known expenditures be made at this time to eliminate the risk of hazard? Is the potential loss one that can be blocked in this manner? Is the known preventive cost worthwhile in light of the potential hazard faced?

b. To what extent are the hazards faced by this firm insurable risks? What types and amounts of insurance should be carried?

c. In what product fields might "futures" trading protect manufacturers against severe price fluctuations by "hedging"?

The following illustrative issues, regarding *distribution* of income, may be cited:

a. To what extent should earnings be "plowed back" and to what extent should they be declared in the form of dividends?

b. To what extent should earnings from good years be placed in reserve to ensure stable dividends during lean years, and to what extent should special dividends be paid "as earned"?

c. To what extent should directors encourage executives and/or employees to share with stockholders in dividend and bonus plans?

2. *CORPORATE SECURITIES*

Having obtained our bearings in business finance as a whole, we may now turn to a more detailed inspection of certain key financial areas. The first such area, corporate securities, deals with evidences of ownership issued to persons who contribute capital to corporations. As the corporate form of business organization sets the tone for our modern economy, the rights, privileges, and obligations of corporate-securities holders are matters of more than passing importance for all students of business.

In the corporate form of business organization, the corporation itself owns the property involved in the enterprise. The individuals who contribute capital to this artificial being own shares in the corporation, but do not own specific assets of the corporation. The corporate shareholder owns a "bundle of rights." The exact nature of these rights in a given case depends upon the detailed wording of the security contract involved.

The capital stock of a firm expresses the sum of values received by the company in the form of money, tangible property, or services. The shares of stock themselves may consist of one or more classes of capital stock. The oldest form of security is common stock. It entitles the holder to share in dividends and in distribution of assets after all prior claims on the company have been met. Unless divided into "Class A" nonvoting and "Class B" voting shares, as a control device, common stock, in general, may be regarded as voting stock. Even in large, publicly-held corporations with a quarter-million or more individual shareholders, this potential power of common stockholders by group action to oust an unsatisfactory management can be of real significance. Under normal circumstances, however, the great majority of shareholders in American industry regard themselves as investors in, rather than as owners of, corporations. They are, as a group, far more interested in income received on stockhold-

ings than in control exercised over the action of professional corporation management.

During the first several decades of the present century, common stock characteristically was valued at "par $100." This nominal valuation had no necessary relationship to book value (net worth divided by shares outstanding) or to market value (current market price prevailing). Par value designations generally did set forth the sum that legally had to be put up by purchasers before the stock could be regarded as "fully paid and nonassessable." Numerous loop-

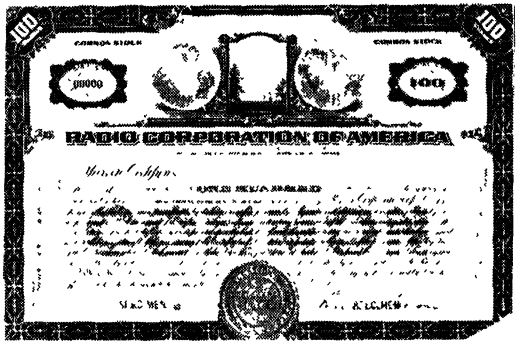


Figure 14–2: Certificate for 100 shares of RCA Common Stock gives owner "a bundle of rights." (*Radio Corporation of America*)

holes involving noncash considerations tended to permit promoters and investors to by-pass this traditional rule as well. If shares sold at a premium (above par) or at a discount (below par), the capital surplus account on the firm's balance sheet had to be adjusted in a highly artificial manner. Moreover, casual investors tended to attach a degree of significance to the par designation that was, in fact, not warranted.

Most states have followed the lead of New York, which, in 1912, authorized the use of no par stock that does not oblige shareholders to contribute any fixed amount of paid-in capital.[1] A firm may price its no par stock at whatever figure the market will bring at the time of original issue without jeopardizing its "fully paid and nonassessible" character. Elimination of the artificial legal technicality represented by par value is, in balance, a gain for corporate management and investors alike.

A second type of stock, which differs in basic ways from common stock, is termed preferred stock. The contract setting forth the "bundle of rights" to be enjoyed by holders of preferred stock characteristically contains several of the following provisions:

a. A priority over common stock, with respect to dividend payments;

b. Either a cumulative or a noncumulative dividend arrangement, in the event that dividends are "passed" in any year;

c. Either a participating or a nonparticipating arrangement, in the event that available earnings permit dividend distributions in excess of whatever stated percentage is to be paid on a preferred basis;

d. Either a priority over common stock or a pro-rata sharing with common stock in the assets of the corporation, in the event of dissolution,

e. A premium payment, in the event that preferred stock is "called" for redemption before the corporation is dissolved;

f. Contingent voting rights under specified conditions, as, for instance, if the directors pass several dividend payments or if the directors wish to dissolve the corporation;

g. A conversion privilege under which preferred stock may be exchanged at the owner's option for other forms of securities;

h. A protective provision setting up a retirement fund for orderly redemption of preferred stock by the firm over a period of time.

Preferred stock is *stock* and, as such, represents an ownership interest, rather than a creditor interest in a firm. This form of equity security carries with it most of the risks of ownership. In many instances, preferred shares are nonparticipating, and thus carry, at best, a fixed rate of return. Preferred-stock ownership does not enable the holder to claim regularized income or to call for the return of principal. Moreover,

[1] W. Bayard Taylor, *Financial Policies of Business Enterprise,* page 170. New York: D. Appleton-Century Company, Inc., 1942.

preferred stock stands in between ordinary or common stock and true credit instruments, such as bonds or notes. Unless preferred stockholders are protected by some of the security provisions listed above, they may find that their equity is being diluted by actions taken in the interests of common stockholders or of management itself.

All forms of business enterprise utilize credit instruments. The individual proprietor or the partner may pledge his plant and equipment as security for a business loan. Stocks and bonds held by an individual may also be pledged as collateral. An individual or firm with a high credit rating may obtain a loan simply upon intention and ability to repay. The use of credit in this manner dates back to ancient Rome and beyond.

Mortgages. The legal instrument most commonly used for secured borrowing in business is the mortgage, either in its individual or its corporate form. A businessman who obtains this type of loan assumes the role of mortgagor (debtor). He conveys title of the pledged property to the mortgagee (lender) by signing what is essentially a deed. If the mortgagor complies with the interest and principal-repayment provisions of the agreement, he may reclaim full title to the property and liquidate the mortgage. During the life of the mortgage, the mortgagor may sell his property without necessity of obtaining permission from the mortgagee. He may obtain a second mortgage on his property as well. In such event, what the mortgagor is concerned with is his residual interest in the property, subject to the obligation to make good in full the terms of his first mortgage. If the mortgagor were to default on payment of interest, principal, or taxes, thus failing to live up to his covenant, the mortgagee may initiate foreclosure proceedings in court. The mortgaged property may then be sold to satisfy the mortgage indebtedness. If the proceeds from the sale fall short of the full mortgage figure, the mortgagor is still responsible for meeting the remainder of the mortgage obligation.

The corporation, being an artificial person in the eyes of the law, has the implied power to borrow. The investors who purchase corporate bonds are represented by a trustee who holds the mortgaged property for their benefit. Under this arrangement, an individual bondholder can take action with regard to his share in the property only by acting through the trustee who represents the interests of the entire bondholder group. The individual bondholder is not, himself, a mortgagee. He is simply one of many creditors participating in a trust estate created by contract between the corporation and the trustee. The bondholder receives from the trustee a certificate entitling him to a stated share in the corporate estate.

Individual corporate mortgage agreements may contain special clauses covering some or all of the following points:

a. Provision of a sinking fund for orderly redemption of bonds;

b. Reservation of the option of calling the bonds at stated prices in advance of maturity,

c. Either an open-end clause enabling the corporation to issue additional bonds under this specific mortgage contract, or a closed-end clause precluding the issuance of additional bonds under this agreement;

d. A statement of the rights and obligations of the mortgage trustee.

Even though corporate loans are secured by what might, in normal times, appear to be adequate assets, mortgage holders would be well advised to remember some lessons of the past. a) The majority of corporate failures occur under circumstances other than "normal" for the industry involved, or for the economy as a whole. b) Assets that have a high going-concern value tend to scale down toward scrap value once the going concern is liquidated. Unless a new company can take over the old company's plant and equipment, or unless the old company can be reorganized, rather than broken up physically for liquidation, the mortgage

bondholder may find that his loan is not covered 100 cents on the dollar in the actual showdown situation. This condition holds all the more strongly if liens, tax claims, and other incumbrances having priority over bond claims are placed against the failing firm before its management is turned over to the trustee for the bondholders.

A second type of security extensively used for business ventures is the debenture bond. A debenture is a long-term issue, security of which rests upon profitable future operations. In the event of financial difficulty, holders of debenture bonds are junior in rights to holders of secured bonds. Debenture bondholders are simply grouped along with other general creditors of the company in liquidation proceedings. Debenture bondholders are represented by a trustee, as are mortgage bondholders. The trustee's usual recourse in event of financial difficulty is to apply to the courts for receivership (*i.e.*, neutral management under court sponsorship, pending reorganization or dissolution of the firm), or for bringing suit on behalf of the bondholders as unpaid creditors. Aside from the absence of foreclosure proceedings, debenture-bond provisions may parallel those of mortgage bonds. Debenture-bond issues frequently are protected through commitments by the company that it will not dispose of essential assets or that it will maintain certain specified financial ratios, which may be regarded as highly favorable to the interests of debenture bondholders. A dilemma faced by debenture bondholders and by equity shareholders is the fact that their special interests lead them to press for restrictions on management's freedom of action to maintain or improve their relative position within the firm, whereas their over-all interests will best be served only if management has enough freedom of action to enable it to take steps designed to improve the long-run profitability of the firm. Restrictions designed to protect special interests in event of dissolution of the firm may prove crippling in a crisis situation, and, thereupon, wipe out much of the value associated with a going concern. A management team that inspires confidence upon the part of equity holders and creditors alike might well find that this confidence is, itself, of decisive importance in assuring management's success.

3. THE CAPITAL MARKET

The capital market differs little in basic theory from the cattle market or from the meat market, although the commodities dealt in bear little resemblance to one another, except, perhaps, in cost. The capital market is composed, on the demand side, of business enterprises wishing to obtain additional capital from sources outside of the firm. It is composed, on the supply side, of investors wishing to put their savings to work in profit-making enterprises.

The principal middleman in this market is the investment banker. He arranges to purchase an inventory of securities from various issuing corporations that are contemplating expansion or refunding. He announces his intentions to prospective purchasers through use of established merchandising techniques. At the time that the new securities are issued, investment bankers underwrite the transaction, guaranteeing to the corporation the funds it requires on specific terms, in advance of sale. In this manner, the risk of the securities-market transaction passes from the issuing corporation to the professional middleman, the investment banker.

Pioneer investment bankers played prominent roles in early U.S. financial history. Included among them were a) Jay Cooke, who distributed nearly half a billion dollars in U.S. Government securities, upon a commission basis, during the Civil War and b) Junius S. Morgan and his son, J. P. Morgan, Sr., who placed American securities with British investors, as well as domestic investors, during the post-Civil War period.[2] Although the relative importance and

[2] *Ibid.*, pages 677–678.





Figure 14–3: "High finance" is symbolized by J. P. Morgan, Sr., who is shown arriving at the House Office Building in 1912, with his son, J. P. Morgan, Jr., and his daughter, to testify before the Pujo Committee (left). Institutions have replaced wealthy individuals of influence in the modern world of finance. The new era is symbolized by the office building of the Chase National Bank of the City of New York, pictured at right. (*Brown Brothers [left] and the Chase National Bank*)

prestige of investment banking has declined since the great stock-market crash of 1929, the functions fulfilled by investment bankers are still of considerable significance for the smooth working of our expanding private-enterprise economy.

When a corporation requires a large addition to its capital funds, it approaches, or is approached by, an investment-banking house to discuss various aspects of the proposed securities issue. The bankers investigate the past, present, and future prospects of the company to ascertain whether the proposed issue will lend itself profitably to securities underwriting. The type and quality of securities to be sold, the quantity involved in the transaction, and the timeliness of the proposed issue, in light of investment-market conditions, are matters to be weighed by administrators within the banking firm in deciding whether that firm wishes to handle the issue. The accumulated knowledge and experience possessed by the banking staff can stand the issuing corporation in good stead in such delicate matters as selecting appropriate securities for issue, pricing the issue, setting the interest rate for preferred stocks and bonds or the price relative to contemplated dividend policy for common stock, and suggesting the "spread" in price between wholesale and retail levels that is necessary in order to compensate various agencies within the selling group.

Investment bankers have lost their dominance in the investment field during recent years to the practice of corporations that retain profits for reinvestment and that place securities directly with large institutional buyers, such as insurance firms. Investment bankers, nevertheless, still play the largest single role among all business groups in directing the flow of investment funds into new areas awaiting commercial development.

The organized security exchanges, such as the New York Stock Exchange, the New York Curb Exchange, and exchanges in several dozen other major U.S. cities, provide a secondary market for new capital issues. The greatest utility of the stock exchanges does not lie in the initial placement of new issues. Investment bankers could accomplish this merchandising task without use

of a stock exchange. The exchanges provide centralized, continuous markets, in which the transferability of security shares may be implemented at the will of the shareholder. Moreover, the stock exchange, as a central market, enables securities traders to determine the current value of various securities in the estimation of numerous buyers and sellers. Information concerning stocks, bonds, and market prospects is also centralized in the stock exchange. Numerous specialized services provide such information in orderly fashion. Informal channels of communication also spread additional information, tips, and rumors, which inevitably form part of the setting in which stock market transactions are carried on.

At the convening of their first session under a buttonwood tree on Wall Street in 1792, 24 brokers adopted some simple and informal rules for operation of a New York stock exchange.[3] These brokers were concerned largely with the marketing of bonds issued by the first U.S. Congress. Several generations later, railroad stocks issued by the Baltimore & Ohio and other pioneer railroads became focal points in stock trading. The volume of trade grew rapidly during the Civil War period. The name New York Stock Exchange was adopted in 1863, and two years later, the exchange moved into a building of its own at its present site. The coming of the transoceanic cable, the telegraph, the telephone, and the wireless were great events in stock exchange history for more reasons than one. In addition to constituting new enterprises in their own right, these improved modes of communication enabled the stock exchange to function more effectively as a centralized securities market. Despite its tremendous growth in scope and influence, the New York Stock Exchange has retained the legal status of a private, nonprofit organization, which simply offers facilities at cost to its several thousand members.

The members of the stock exchange fall into two broad groups, namely, a) brokers, who deal primarily for others in the purchase and sale of securities, and b) dealers, who operate primarily for their own accounts in trading on the exchange floor. Brokers hope to earn their livelihood through receipt of commissions. Dealers hope to earn their livelihood through "buying cheap and selling dear."

The New York Stock Exchange is administered by a 32-member Board of Governors, which operates through standing committees in policy-making matters and which appoints a full-time president for executive matters. Firms desiring to list securities issues for trading on the New York Stock Exchange must file documents disclosing detailed information about the firm, its financial status, and other pertinent corporate information indicating that it is a reputable organization whose securities merit national distribution. The amount of information required was stepped up considerably through requirements of the Securities Act of 1933 and the Securities Exchange Act of 1934. The activities of exchange members are now closely watched by the Securities and Exchange Commission (S.E.C.) as well as by the stock exchange's own Board of Governors.

In trading on the stock exchange, a customer may assume one or more of several distinct market positions. He may, of course, simply instruct his broker to buy or sell a specific bloc of shares "at the market," *i.e.*, at the prevailing market price of a particular hour. He may, if he wishes, instruct the broker to buy or sell if the stock in question rises or falls during the day or week to a predetermined price, which differs significantly from the current market price.

Market speculators may increase the effects of their moves with a given amount of capital by buying on margin, *i.e.*, on credit. The speculator who makes a down payment of 66.7 per cent on his stock purchases, with the expectation of selling at a profit within a few weeks' time, may in-

[3] *Ibid.*, page 708.

crease his net gain by 50 per cent through the use of margin buying. If he were to guess wrong, his losses would be increased by the same leverage action. During the dark days of October 1929, speculator after speculator was sold out by his broker with catastrophic losses, as the market plunged faster than the rate at which he could post a new margin.

Speculators may "sell short" as readily as they may "buy long" on margin. In selling short, the customer sells to a broker more stocks than he actually possesses at the time. His contract is for future delivery some weeks or months hence of the stocks in question. The calculation of the "bear" selling short is that the "bull" buying long was overly optimistic about future trends in the market. A "bear" selling short today hopes to purchase stock later to meet his delivery promise at a time when the stock will be selling at a lower price than is currently the case. Should the "bear" prove incorrect in his forecast, the advance in stock prices will measure the extent of his trading losses. To this loss the broker's fee and the government's turnover taxes must be added.

In addition to organized securities markets, the financial world contains a vast network of over-the-counter markets. Such markets are not centralized and continuous. Individual dealers perform the function of seeking out buyers for sellers, or vice versa, for securities not listed on the organized stock exchanges. Over-the-counter markets are also used extensively for the distribution of new issues of stocks and bonds that are primarily of local or regional importance. Operating together in surprisingly integrated fashion, these diverse securities market units comprise agencies of considerable usefulness in facilitating the functioning of the U.S. economic system as we know it today.

4. *OTHER FINANCIAL INSTITUTIONS*

The commercial-banking system supplies a substantial portion of the financial resources requisite for the continued operation of our modern private enterprise economy. Commercial banks are a primary source of working capital, particularly for moderate- and small-scale business enterprise. These firms have not yet established financial independence in the same degree as have our large publicly-held corporations. They are unable to obtain long-term funds on favorable terms through the capital market. They rely, to a very marked extent, upon the commercial banker to supply their variable working-capital needs. In smaller enterprises, working-capital needs tend to bulk large in proportion to fixed capital needs as the manufacturing and service industries involved are relatively light in nature.

Commercial bankers sometimes perform other valuable services by encouraging the growth and development of new enterprises and by helping to maintain the vitality of small enterprises within the geographical territory they serve. In such cases, the bank representative frequently acts as friendly counselor and "business doctor," above and beyond his function of approving or disapproving applications for commercial loans. For this reason, it is equally as important for businessmen to select their banks carefully as it is for banks to select their business clientele carefully. Some banks make specialties of dealing with particular types of enterprises, although they stand ready to serve all worthy applicants. A particular bank may be too large or too small to serve a particular customer's needs effectively. The characteristics, experience, and interests of the bank's leading personnel tend to make this statement a valid one, fully as much as does the general magnitude of the bank's assets.

Banks have their own, fairly-standardized list of points to check in analyzing a potential customer for credit purposes.[4] They include a) the strength, ability, and character of the firm's management, b) the nature and promise of the business itself, c) the in-

[4] See Floyd F. Burtchett and Clifford M. Hicks, *Corporation Finance,* page 512. New York: Harper and Brothers, 1948.

come-producing ability of the business, d) the disposition of these earnings, e) the over-all financial record of the company, with emphasis upon recent financial activity, f) the current status of the firm's finances, including net working capital, cash, receivables, inventories, and payables, g) the circumstances surrounding the present decision to borrow, and h) the status of external factors affecting the firm, such as the general strength of the industry, the keenness of competition, and trends in the market.

It may be seen from the listed points that a firm wishing to qualify for a bank loan must "put its house in order"—or, preferably, *keep* its house in order. Bank loans may not be counted upon by businessmen seeking a means of salvaging sick firms. In addition to requiring full disclosure and checking upon statements made, banks oftentimes follow a practice of requiring a periodic cleanup. This practice establishes a customer's ability to pay up all bank loans at a time when the firm's working capital needs are "normal." The bank restricts its loan program to short-term working-capital loans, which are required to meet seasonal or temporary working-capital peak needs. Basic working capital for a going concern should be contributed by equity shareholders, rather than by short-term creditors.

Two additional types of financial institutions may be briefly identified at this time. They are the commercial-paper house and the finance company. Commercial-paper houses are not banks, but they serve the short-run financial needs of established corporations effectively on advantageous terms, in instances in which they are used. The representatives of commercial-paper houses analyze the credit status of applicants for loans, in much the same manner as would representatives of banks. If the applicant is deemed a worthy risk, the house advances cash in exchange for a block of unsecured notes, payable by the firm a few months hence. The house charges a moderate commission for this service and also discounts the notes at moderate rates. Various estates, banks, insurance companies, and other institutional investors who might desire to hold short-term notes for their own purposes purchase these promissory notes from the commercial-paper house, which serves as middleman in the various transactions.

A large number of finance companies are active at the dealer and consumer level to facilitate the purchase of goods and services. The first great wave of "instalment buying" spread over the U.S. economy in the 1920's. Although dollar volume of consumer credit was curtailed in keeping with the decline in output during the trough of the depression, instalment buying has continued as a characteristic feature of consumer finance in a wide range of fields ever since. Some finance companies specialize in one or a few types of fields, such as automobile or furniture finance. Others assume general calculated risks in practically all consumer goods fields. The rate of interest charged by finance companies is admittedly high, compared with that charged by banks and other financial institutions. The explanation offered by finance companies is that the risk factor is at a peak in the field of consumer finance.

5. *VALUATION AND CAPITALIZATION* [5]

The terms "valuation" and "capitalization" refer to two central problems of finance, which, in practice, are closely related. Determining the value of a business enterprise is a matter of basic importance to economists in general and to investors in particular. The individual products of business enterprise have price tags placed upon them, day in and day out, as they are exchanged for cash in the open market. The same concept of value may be applied upon occasion to the business enterprise as a whole. In such instances, however, a whole made up of interacting parts is involved.

[5] See W. Bayard Taylor, *op. cit.*, pages 608–673, for a comprehensive discussion of these topics.

In terms of value, the whole does not, here, merely represent the aggregate of its component parts. Intangible items of "going concern" value are also involved. Management skill, experience, and reputation have scarcity value that cannot be weighed by the pound on the auctioneer's scales or sold by the pound of the auctioneer's gavel. The going concern's assets are joined together in a functional arrangement, which permits them to produce values not even suggested by inspection of isolated parts. The good will or known name developed by the firm over the years, through value delivered or through advertising space purchased, also contains elements of intangible value that cannot readily be priced in the competitive market. Nevertheless, valuation of business enterprises must be attempted upon occasion by numerous persons who carry on activities in the world of finance. Though a rough-and-ready process, valuation serves as one of the basic techniques of the trade.

In modern finance, the values or assets possessed by a business enterprise are capitalized so that they may be covered by items to be found in the capital structure of the enterprise. The firm's assets or capital are valued in its balance sheet at a given figure by consistent application of a given accounting method. This value on the asset side of the balance sheet is, by definition, to be matched by items on the liability and equity side of the balance sheet. These items may take the form of current liabilities, intermediate or long-term debt, equity securities, and surplus (or deficit). In simplified fashion, valuation may be associated with the assets or capital possessed by a firm, and capitalization, with the liabilities and equity pertaining to the firm.

A figure expressing the dollar value of a firm may be arrived at through the use of one of a number of alternative techniques. The specific techniques adopted will usually depend upon the purpose that the person making the valuation has in mind. An investor may decide that valuation is equal to earnings divided by an appropriate rate of return on capital invested ($v = \frac{e}{r}$). Thus a firm that "normally" earned a net profit of $1 million, in an industry that "typically" returned 5 per cent on investment, would be fairly valued at $20 million. A firm that earned $2 million, under similar circumstances, would be valued at $40 million. A firm in an industry in which risks were considered to be greater might be expected to return a higher figure, say 10 per cent, if successful. In this case, the valuation of a firm earning $1 million might be just $10 million. It will be noted that a great deal depends upon the evaluator's concept of what is a "normal" period of time over which to observe net profit and of what is a "typical" return on investment for the type of enterprise involved. There is no set or easy answer in the abstract for either question. Here, as elsewhere, the case method may profitably be used in applying general principles and techniques.

A method of valuation receiving much strength from its adherence to accepted accounting methods is that of using original or historical cost. Original cost of assets, less recorded loss of value through depreciation, yields a figure untouched by market fluctuations. Although depreciation rates are, themselves, merely estimates, a great deal of accounting experience may be drawn upon for benchmark purposes in this field. A major limitation in the historical cost method is its inability to take into account the intangible, going-concern values, referred to earlier in this section, that "make a house a home" and make a collection of assets a profit-making enterprise.

Still another method of valuation that deals with tangible assets to the near exclusion of intangibles is that termed the reproduction-cost method. Reproduction cost takes into account changes in the price index. If "equivalent plant" is substituted for "identical plant" in reproduction estimates, the factor of obsolescence may be minimized. Interested parties evaluating public-utility properties for rate-making purposes have sometimes wished to have

the "fair return" on investment based upon replacement cost in boom times and historical cost in time of depressed values. Persons evaluating firms that compete in the unregulated portion of the economy typically place more weight upon the intangible values of a going concern than would be permissible under strict adherence to either the historical or the replacement cost methods.

A method of valuation, which not only omits all intangibles, but also ignores costs of assembling assets for particular purposes, is that of scrap or liquidation value. When this unhappy stage is reached, such intangible values as do remain might well be negative, their value having long since departed.

In arriving at a valuation for a particular firm, an analyst might well adapt his principal method to the circumstances under which the valuation is made. He might also adopt a plural approach, ascertaining valuation by one method in detail, but checking this figure against approximate valuations that might be arrived at by use of one or more alternative methods. Knowledge of the range of values involved may, itself, be very useful information in arriving at financial decisions.

When a new firm is launched, it frequently happens that the promoters retain for themselves common stock considerably in excess of the tangible assets the firm can list in its balance sheet. In such case, before its earning ability has been tested out, the new firm may be classified as "overcapitalized." In this instance, "stock-watering" will also have occurred as the securities of the company were expanded, without correspondingly expanding the assets of the firm. The promoters in our illustration have capitalized expectations far in advance of their realization.

The hypothetical promoters' estimate of earning power for the new enterprise might well be vindicated a few years later, once the firm had weathered an initial shakedown period. A major portion of each year's earnings might then be needed for expansion purposes. In this event, the plowback of profits without change in capital structure would shortly change an initial overcapitalization into a subsequent undercapitalization. The portion of the account entitled "Organization Expense" that did not represent a tangible outlay during the formation of the company might be liquidated out of earnings and replaced by an equity account entitled "Earned Surplus." In such a case, the initial "water" will have been squeezed out of the capital structure.

If both the earnings of the company and the company's need for additional capital continued apace, the firm might well "water" its stock again by declaring a stock dividend, without thereby passing all the way from a condition of undercapitalization to one of overcapitalization. Most managements prefer to show on their books a substantial earned surplus as a "badge of honor," as well as for use as a "cushion" for continued payment of accustomed dividends, if a poor earnings year were encountered. Earnings may be paid out of surplus even if the current year's activities resulted in a deficit on the profit-and-loss statement. Dividends may not be paid out, however, from past earnings once these earnings have been built into the capital structure through a stock dividend. In such case, unless the previous action of the company were undone, the capital of the company would be illegally impaired.

Managements that amass large surplus accounts without periodically capitalizing the funds through issuance of additional securities are frequently criticized by investors as being ultraconservative. The issuance of a stock dividend is typically accepted in the securities market as a sign of corporate well-being and as a sign that the firm in question is preparing to utilize its capital effectively for long-range, income-producing purposes. The total value of the firm's shares after a stock split frequently exceeds the previous market value of total shares outstanding by a wide mar-

gin. Investors gain significantly both in market value of shares held and in total dividends paid on their stockholdings. Firms that conservatively retain very large earned-surplus accounts may find that the market value of shares representing their undercapitalized assets does not reflect the real worth therein contained. The small investor tends to refrain from buying high-priced stocks. This fact in itself holds prices down compared with values represented. There is always the possibility that the directors will "take a flyer" in some ill-conceived plan with funds that are "buried in surplus anyhow." A firm that is decidedly undercapitalized lays itself open to charges of profit gouging, for its dividends per share will tend to appear excessive to persons who do not know of the high book value represented by each share outstanding. For all of these reasons, investors, who cannot readily realize their interest in an undercapitalized firm simply by selling their holdings, bring pressure upon the directors to "capitalize the surplus" so as to keep in step with developments within the firm.

6. *FIXED CAPITAL* [6]

We have earlier distinguished between fixed and working capital in asserting that the uses to which funds are to be put exercise a strong influence in determining the agency from which funds are to be sought. We drew distinctions on this score between long-term capital, such as is supplied by the capital market in the form of stocks and bonds, and working capital, such as is supplied by commercial banks on promissory notes. In this section, we shall focus attention upon the fixed capital, which is normally raised through the instrumentalities of long-term finance.

Fixed capital, such as plant and equipment, is relatively slow to change in form, both in time and over the course of the industrial financial cycle. The emphasis must remain upon the word "relatively," however, for the changes in form and content that occur in all phases of modern industry over the decades are startling even to persons living through the period in question. In modern times, the obsolescence element in the depreciation process has been the great enemy of fixed capital. Fixed capital, as its name implies, gives hostages to change and progress by the very fact of its rigid nature. A plant shell that is capable of sheltering equipment for a century or more rarely serves functionally for more than half this period before it is completely outmoded. There is little reason to believe that this situation will prevail less in the future than it has in the past, despite the best efforts of modern architects and engineers. The pace of progress in development of new production processes is such as to undermine the best theories of plant design for given purposes before many decades have passed.

Even the factory site may become completely outmoded for its original purpose before the company has had opportunity to attain full growth. A plant site developed prior to World War I characteristically had railroad travel in mind as the sole transportation factor. A plant site developed between World Wars I and II most assuredly added accessibility for truck transportation to its list of location factors. Accessibility to local automobile traffic is also an essential ingredient, now that the private auto and the bus have replaced the trolley as the means of locomotion used by the working force. Congested conditions and tight labor supply within old industrial areas have lent force to a movement of factories to suburban sites. Plant sites developed after World War II counted accessibility for air travel as one of the location factors. Although air freight has not yet become competitive for more than a handful of luxury items, there is no guarantee that it may not some day come into its own. Air travel by plant executives, whether by commercial

[6] See chapter 7 on Electronics Park Plant and Equipment and chapter 10 sections on Production Processes and Plant Layout for concepts pertaining to fixed capital.

air line or by private plane, is, of course, commonplace.

The drift of population westward in the United States over the decades has also tended to make specific plants in specific industries obsolete long before they succumb to wear and tear alone. Basic shifts occurring in market location, in labor supply, in materials supply, and in transportation mode may force a firm to shut down its original plant. Failure to provide ample acreage for future expansion is also high upon the list of reasons why fixed capital cannot always be "fixed."

Little discussion is needed to convince the reader that equipment and machinery have relatively limited life spans in modern industry. Changes in design and style are less important in the case of industrial machinery than they are for private autos. Changes in capacity and in efficiency are something else again. Once a competitor has acquired a machine that can do the job for far less out-of-pocket cost, rival manufacturers must scrap their old machinery, which may be in perfect running order, and buy improved models, which will enable them to remain competitive. The savings in out-of-pocket costs, under such circumstances, will pay for the investment in new machinery in short order—unless still another round of significant improvements occurs.

The items of fixed cost referred to are normally purchased with funds raised through methods of long-term finance. Long-term finance involves the capital structure of the firm, *i.e.*, its long-term securities, both equity and debt. Securing the total quantity of capital needed by a firm represents one dimension in the management of long-term finance. So arranging this quantity that there is a fortunate combination of equity and debt represents a second important dimension. Modifying both the quantity and the mixture, in keeping with changes occurring in the capital market, in the business economy, and in the life cycle of the firm, represents an important third dimension. The proper amount of capital, the proper mixture, and the proper modifications over time all depend, of course, upon the facts of the case under study.

A young, undeveloped firm, or a firm in a widely-fluctuating industry, should draw its long-term capital from equity sources exclusively. To saddle the firm with long-term, fixed-interest securities when earnings are uncertain would invite disaster: liquidation or loss of control to creditors.

When the firm has developed into a vigorous competitor with an assured earnings record, in relatively bad as well as in relatively good times, a portion of the minimum "assured" earnings may be earmarked for payment of fixed dividends on preferred stock or of fixed interest charges on bonds. The corporation may then utilize the additional funds raised through the preferred-stock or bond issue for expansion of activities, without tying up additional funds drawn from the common stockholders of the firm. Raising funds in this manner is termed "trading on the equity." Money is obtained from creditors at a cost considerably less than the rate that the money can earn while put to use by the firm. The difference between the fixed interest charge and what the funds earn is additional profit available to holders of common stock without any additional investment on their part. The common stockholders, holding a residual interest in the firm, of course, assume the risk of failure under conditions of expanded scale operation.

A firm that no longer has prospects for profitable expansion may find the time appropriate to cease to trade on the equity. It may pay off its bonds upon maturity or redeem them at the call price. The firm may also call in its preferred shares if it had wisely included provision in the original stock contract to do so. In this manner, the common stockholders may enjoy whatever earnings are available for the use of the more limited quantity of capital. Moreover, the firm will not be in as shaky a position as it would be if large fixed obligations were retained

7. *WORKING CAPITAL* [7]

No sharp or absolute line can be drawn between fixed capital and working capital as to the length of time that the funds they represent will remain within the business. A particular machine may last 20 years as fixed capital, but not merit replacement once its useful life is ended. A particular level of raw-material and work-in-process inventory may be absolutely essential to the continued operation of the business, with particular pieces of material meriting replacement millions of times during the life span of the firm. The above illustration simply compares minimum inventory, as a primary part of regular working capital, with an increment machine as an optional part of fixed capital.

Working capital is the amount of current assets, such as cash, marketable securities, accounts and notes receivable, and inventory, a firm has on hand to meet its current operating needs. Current liabilities, which these current assets must cover in the course of operations, include cash payments for payroll, dividends, taxes, and other expenditures, plus accounts and notes payable, and accrued expenses and charges. A firm that cannot meet its current obligations, in one manner or another, would be declared insolvent no matter what the potential value of fixed assets, which it could not realize for payment purposes. Working-capital needs may correctly be termed "short run," but by the same token they denote pressing, *immediate* needs.

Working-capital needs may be broken down into component categories and subcategories. A certain level of working capital may be termed "regular" working capital for the firm in question. Working capital beyond this level of need may be termed "special" working capital. Regular working capital breaks down into "primary" and "normal" working capital.[8] Primary working capital is the irreducible minimum amount of current assets which a firm must have on hand if it is to operate at all. These basic needs could be spelled out in detail in terms of cash, receivables, and inventories. Normal working capital is the additional amount of working capital needed regularly as long as the firm continues to operate at a "normal" level. It is needed constantly during the years immediately ahead if the firm carries out projected plans of operation.

Special working capital covers that portion of current assets which expands and contracts as a particular situation demands. It cannot be permanently employed on an efficient basis in the firm in question under expected conditions. Special working capital may be broken down further into "seasonal," "cyclical," and "emergency" working capital.[9]

Seasonal needs are those that come and go periodically as do the seasons of the year. The management of a canning company, for instance, knows that it will require additional working capital for the purchase of raw materials during the harvesting season. A TV firm likewise may fill extra warehouses during the fall in anticipation of peak Christmas season sales.

Cyclical working capital needs are those that rise during the upswing phase of the business cycle and are eliminated again during the downswing phase in relation to a calculated norm. All firms within the industry, and firms in general throughout the economy, tend to seek and to return cyclical working capital in unison.

Emergency working capital is needed on a stand-by basis to meet unusual expenses that are not of an insurable nature or to take advantage of unusual opportunities. A sudden breakdown in equipment, an order

[7] See Joseph H. Bonneville and Lloyd E. Dewey, *Organizing and Financing Business*, 5th ed., pages 211–230, New York: Prentice-Hall, Inc., 1952, for a comprehensive discussion of working capital requirements.

[8] See W. Bayard Taylor, *op. cit.*, page 387.

[9] *Ibid.*

requiring extra-shift operation, or an opportunity to purchase materials on unusually favorable terms may call for extra working capital on a short-run, emergency basis.

The basis for distinction between working capital and fixed capital is not length of time that either form is needed in the business. Both are essential if there is to be a business at all. The fundamental difference is, rather, in the length of time required for either form of capital to complete its circuit flow. A dollar invested in fixed capital may come back a fraction of a mill at a time in the form of depreciation expense charged to each unit of product turned out. A dollar invested in working capital may come back in full next week (accompanied by a profit). The raw material purchased by this dollar may have been processed into finished inventory, sold, and shipped out to become part of accounts receivable, and then paid promptly under stimulus of a cash discount, so as to complete its circuit flow in short order. This circuit process may be repeated week after week for an indefinite number of years until the dollar invested in fixed capital also completes its own circuit flow, and starts, in whole or in part, upon a second venture.

The increment dollar invested in fixed capital is continuously occupied, perhaps nailing down a particular corner of a particular timber for a half century. The increment dollar invested in working capital is less continuously employed. Some of the time it is running its weekly, or monthly, circuit through raw material, finished inventory, receivables, and back to cash. At times though, it is simply on call as unassigned cash. This working-capital dollar is expected to return its owner a profit comparable to that earned by the fixed-capital dollar, after allowance for differences in risk. If it did not, the dollar would be sent out on a different mission during the next accounting period. If a firm cannot keep this working-capital dollar occupied, the firm must, nevertheless, pay its keep during downtime or else return the dollar to its owners in orderly fashion until it is again needed. If this particular dollar is needed only on a short-term basis, it should be borrowed through a suitable short-term loan.

Under the principle outlined above, we may identify the normal sources of funds needed for various working-capital purposes. Special working capital of an emergency nature may be needed for a period of weeks or months only. An unsecured bank note for the approximate period of need, which note could be renewed if necessary, would be a logical method of obtaining emergency funds. The same analysis holds for seasonal needs. Unless the firm itself wished to go into the investment business during the off-season, it would be well advised merely to borrow, rather than own, funds to meet seasonal needs. If working-capital needs can be correctly analyzed as cyclical, funds to meet them might be sought at commercial banks or through other short-term credit channels. A difficulty frequently encountered during boom days is 1) a tightness in credit for short-term purposes and 2) an optimistic inclination by industrialists to believe that the expanded demand is permanent enough to justify long-term financing.

Long-term financing, whether through equity capital or through debt, if assured earnings warrant, is highly appropriate as a source of regular working capital, of both the "primary" and the "normal" varieties. It is the duration of the need for funds, rather than the specific asset acquired with the funds, that indicates the source to be tapped to fill the need.

Students and practitioners of finance have in their vocabulary the term "net working capital," as well as the term "working capital" itself. In the discussion to date, we have discussed working capital requirements from the point of view of one determining gross or over-all, rather than net, working capital needs. If operations ran smoothly, a firm that owned a portion of its fixed assets could borrow its entire working capital fund without losing solvency. Current assets on the balance sheet would be matched exactly by current liabilities.

analysts in examining company records. These ratios measure the size of one quantity in comparison to another quantity that presumably has some functional relationship to it. Financial control is facilitated by action designed to keep critical financial ratios within an acceptable range of values. Some of the more important ratios commonly used by management are described below. They fall into three primary groups, namely a) balance-sheet ratios, which are computed as of a fixed date and are, therefore, static in nature, b) profit-and-loss statement ratios, which are computed on activity over a period of time and are, therefore, dynamic, and c) activity ratios, which show a static balance-sheet item in relation to a dynamic profit-and-loss statement item, thereby indicating turnover during a period of time.

a. Balance-sheet ratios. The "current ratio," obtained by dividing current assets by current liabilities, indicates the number of dollars of assets available to pay off debts coming due within the year. A ratio of 2 to 1 or better is regarded as a favorable sign in most industries under normal conditions. It means that two dollars in current assets, such as cash, receivables, and inventory, could be used, if necessary, to cover each dollar of current liabilities, such as accounts payable, notes payable, and accruals (*i.e.*, obligations for past services rendered).

Because the current ratio is a "family type" of ratio, which could be made up of various items in radically differing proportions, a more detailed breakdown of its elements into subratios may be useful for clarification purposes. For instance, a "quick ratio" is found by dividing quick assets (*i.e.*, assets that can be turned into cash on short notice with little sacrifice) by quick liabilities. A firm that had a large portion of its current assets tied up in raw materials and work in process would not fare as well on the quick-ratio test as on the current-ratio test. Still other subratios may be used. The ratio of inventory to receivables, for instance, may be employed as a check upon the merchandising results being achieved by the firm. A dangerous pile-up of inventory may be detected by observers following company reports over a period of time.

A "net-working-capital ratio" may be computed by dividing the difference between the current assets and current liabilities by the amount of current assets. This ratio indicates the proportion of current assets provided by owners, as compared to lenders. The ratios of gross working capital and of net working capital to total capital may also be of value in analyzing the problems of the firm. During periods of expansion, management sometimes tends to convert working capital into fixed capital, despite the fact that working-capital needs will themselves expand once the new plant and equipment are in operation. Observation of working-capital ratios may give management an early indication of difficulties ahead, calling for additional financing.

Ratios dealing with debts owed by the firm are pertinent in a number of situations. The ratio of current to total debt will indicate the immediacy or long-range nature of the need to raise revenues with which to pay off this debt. The ratio of fixed assets to debt will indicate the extent to which creditors are supplying the fixed capital of the business. The ratio of net worth to total debt will measure the over-all extent to which owners are trading on the equity. Creditors are particularly interested that there be a substantial ownership cushion beneath the various layers of borrowed funds.

b. Profit-and-loss-statement ratios. The profit-and-loss statement, which records income and expenditures during a given period, inspires a number of significant ratios, the most important of which relate various items to sales. The "operating ratio" or "gross-profit ratio" is calculated by dividing operating expenses by operating revenues. A high operating ratio may indicate a high cost condition or a highly competitive situation. A rising operating ratio may threaten the profit position of the firm, unless volume

also is increasing or unless the price-cost relationship can subsequently be improved by a rise in sales price or a drop in cost, or both.

Investors have a particular interest in the ratio of total fixed charges on debt to the earnings available for payment of interest. The resulting figure measures the "margin of safety" for protection of bondholders and other creditors. The ratio of earnings to dividends paid indicates the extent to which earnings are needed to meet future dividend requirements and also the extent to which earnings are plowed back into the business.

c. Turnover ratios. Turnover ratios provide useful concepts, for they show a turnover effect by comparing a static element, such as gross working capital, with a dynamic element, such as gross revenue from sales. The particular turnover ratio cited here measures the turnover of gross working capital. It shows how many dollars' worth of sales are financed annually by each dollar of working capital. If the ratio is very high and still rising, it may indicate a developing need for more working capital within the business. A low and falling ratio may serve as a spur to renewed sales effort by management.

Other turnover activity ratios include 1) gross sales divided by inventory as a rough measure of inventory turnover, 2) gross sales divided by total assets as a measure of the turnover of assets, and 3) gross sales divided by net worth as a measure of the activity of net worth.

Uses of financial analysis. Financial analysis may be used along with other evidence to answer the following types of questions:

1. What are the sources of the capital used by this firm?
2. What uses are being made of the capital by the firm?
3. How adequate is the firm's working capital?
4. How adequate is the firm's total capital?
5. How profitably is the firm's capital being utilized?
6. What strengths and weaknesses are indicated with reference to the firm's management, subject to verification upon fuller investigation?

Even though financial ratios yield rather indeterminate results in and of themselves within the "normal range" of activity, this evidence of normalcy is not entirely a negative finding. The financial ratios of a firm are best studied on a comparative basis. The firm itself may be observed over successive report dates, *e.g.*, monthly, quarterly, or annual. The firm may be compared a) with its industry, b) with the economy as a whole, c) with roughly similar firms, and d) with a variety of firms with well-known strengths and/or problems.

10. BUSINESS RISKS AND INSURANCE

The owner of capital risks what he already possesses as he puts it to work in an effort to produce new income. Risk and uncertainty are ever-present forces in the world of change and progress that we know. Investors, administrators, rank-and-file employees—indeed, all persons everywhere—accept risk and uncertainty as part of their everyday lot. Nevertheless, one of the great drives motivating most human beings is a desire to substitute relative certainty and security for many types of risk and uncertainty. There is a spirit of venture and adventure that is of equal importance with security, to be sure. Yet, even the big-game hunter takes comfort in the thought that his wife and family are secure in "the States," while he himself is on safari in the veldt.

The business administrator, risking capital in the production of goods and services, typically seeks to group necessary risks in the general area of his main business. He protects his flanks by using insurance, hedging, and other risk-reduction devices in situations in which he cannot eliminate risk entirely. The policies a businessman adopts in this field may prove of vital importance to the success of his entire operation.

Elimination of risks. A number of industrial risks can be virtually eliminated by

administrative action. The installation of safety guards on presses can eliminate a source of crushed hands. The enforced wearing of steel-toe safety shoes can eliminate a source of crushed feet. An automatic sprinkler system can reduce the hazard of fire loss in a retail establishment. Fireproof construction may also be approached in the building of a modern plant.

Insurance against risks. A number of other risks cannot be eliminated, but can be insured against. Insurance is a social device for spreading the costs of the risk of loss over a large group of persons subject to the same risk. In this manner, the certainty of a relatively small premium payment for all persons is substituted for the uncertainty of a much larger, unreimbursed loss for a few persons. A firm can prepare itself to carry the burden of known insurance expenses. It might be forced to the wall otherwise if it suffered the unexpected misfortune of a major fire, explosion, flood, theft, accident, or the death of a key executive without receiving substantial reimbursement.

Although an individual or a firm cannot predict when an actual loss will strike, a large group of individuals or firms can predict the incidence of loss among its members with reasonable accuracy. Experience tables may show, for instance, that five firms out of every thousand of a certain type would suffer fire losses amounting to $100,000 in total during any given year. If all of these firms purchased policies for fire insurance, an annual premium payment of $100 a firm, plus administrative and selling expenses, would cover anticipated losses of $20,000 or more per firm without burdening any one firm unduly. Experience tables also indicate that six men in every thousand will die at age 40. A small annual premium payment by each man in this group will provide, over the years, a relatively large sum for the care of the family of each man who unexpectedly dies at this age. Similar calculations may be made, under carefully specified conditions, for burglary and theft, public liability, automobile, marine, weather, strike, and numerous other types of insurable losses.

It is the function of insurance companies, specializing within various fields of insurance, to obtain the participation of a representative cross-section of persons or firms faced by a common hazard. These insurance companies merchandise their policies in myriad ways to suit the convenience and fancy of the prospect. Their basic mission is that outlined above, however, no matter what label is assigned to the particular package being sold.

The policies followed by the management of individual firms, in regard to insurance, may differ significantly from company to company. Some business firms carry almost all available types of insurance in large quantities on the theory that maximum protection will reduce the severity of the risk factor in the company's operations. Other firms insure only on a minimum basis against very large losses. They may agree, for instance, to stand the first $25,000 of any loss themselves. Losses above this amount will be reimbursed by the insurance company. The premium cost of this minimal-insurance plan is relatively low, of course. The money saved on premiums can be used to reimburse the firm for small losses incurred. A few firms, such as railroads or chain stores with scattered properties, are in a position to insure themselves through "self-insurance" plans. By allocating a given amount each year to an insurance fund, such a firm can, in time, effectively act as its own insurance company. Initially, a firm contemplating self-insurance would be well advised to arrange its commercial-insurance accounts on a gradually decreasing basis, so that coverage will be ample until the firm's own insurance reserves are built up.

A new firm, in establishing its insurance program, should select its insurance company or companies with much the same care that would be given to selection of a bank. A great deal hinges upon the basic honesty and the professional competence of the representatives of the insuring agency.

Hedging. In a limited number of industries that process basic farm commodities, it is possible for firms to gain protection against changes in raw-material prices through the

practice of "hedging." A cotton-textile manufacturer, for instance, might prefer to seek his profit through manufacturing operations rather than through guessing whether cotton prices will rise or decline over the next several months. Accordingly, the manufacturer would enter into a future contract to sell raw cotton to some buyer a few months hence, at the time when the cotton textiles made from today's raw cotton would be placed upon the market.

If the price of cotton dropped during these months, the manufacturer would gain back through the delivery of low-price raw cotton what he lost while processing his high-price inventory of raw cotton purchased on today's market. If, on the other hand, the price of cotton rose during this period, the manufacturer would experience an inventory gain on cotton being processed, but suffer a roughly offsetting loss on raw cotton, which he would have to purchase at high prices for delivery on the futures contract. In either event, the hedging process would enable the manufacturer to seek his profit in the manufacture of textiles without speculating on price movements in the raw cotton market.

11. FAILURE AND REORGANIZATION

Despite the best efforts of management to eliminate risks or to shift them through insurance and hedging, a great many unavoidable risks must be shouldered by the business firm. Risks of depression, obsolescence, changing consumer tastes, business competition, and costly mistakes in management confront all firms. Many firms succumb sooner or later to the undermining effects of these hazards. These businesses are judged to be failures, and must undergo reorganization or liquidation.

It is probable that all businesses, at one time or another, fail to meet the rosy expectations of some of their sponsors. Even highly successful firms fail to obtain every possible advantage out of many situations. A firm is technically judged to have failed, however, only when it is insolvent. Insolvency is a condition in which the firm is unable to pay its debts as they come due. The causes of failure may sometimes be largely internal in nature, stemming principally from poor management. They may sometimes be largely external in nature, stemming principally from general economic conditions for industry in general or for one line of business in particular.

Whatever the cause of business failure, the creditors of the firm have two general courses of action open to them as they seek to recoup their capital. Creditors may mutually agree to settle the firm's problems outside the courts, through nonjudicial adjustments, or they may carry the case into court for application of judicial methods of settlement. In general, it is desirable, when feasible, to avoid the extra expenses in time and in stipends involved in judicial settlements.

If a settlement can be effected out of court, it may take one of three forms. a) Minor problems may be overcome simply by granting the debtor firm an extension of time in which to raise funds. b) If full recovery is not practicable, the creditors may decide among themselves upon a composition settlement, in which each creditor agrees to accept a stated number of cents on the dollar over a period of time. c) If liquidation must be effected, an assignment agreement may be reached under terms of which the disposal of the firm's assets will be carried out.

If a large business with many creditors and many securities holders is involved, court action is almost invariably resorted to in cases of insolvency. Two major types of judicial settlements are receivership in equity and bankruptcy. a) An equity receiver is an agent of the court assigned the task of conserving the insolvent firm's assets, until a settlement can be worked out among the creditors. The creditors themselves prepare the reorganization plan under an equity receivership. In extreme cases, a business may still have to be liquidated under the direction of the receiver. b) An individual or a firm that cannot pay off debts when due may petition the court for bankruptcy and be relieved of all further obligation to pay these debts. All of

the assets of the bankrupt person or firm, with few exceptions, are seized for distribution among the creditors. Bankruptcy may be resorted to only once in any 6-year period. The future credit standing of a known bankrupt is, of course, highly suspect for years to come. Many persons who later recoup their fortunes pay off old debts, despite the fact that they are no longer legally obliged to do so.

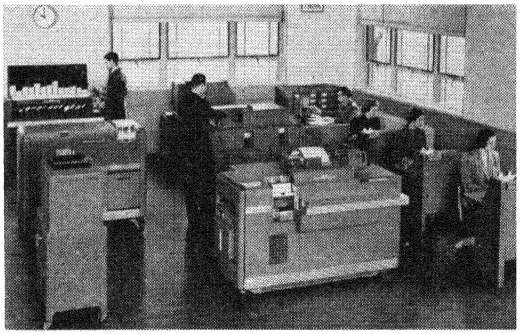
Special procedures, designed to facilitate the rehabilitation of large corporations, were passed by Congress during the 1930's. The Chandler Act of 1938, which revised the basic Bankruptcy Act of 1933, set up the framework under which most insolvent businesses were being reorganized at mid-century. Under this act, a trustee is appointed by the court, both to supervise the insolvent corporation and to prepare a plan of reorganization. This reorganization plan need be accepted by just two-thirds of each class of debt holders before going into effect. Small minority holders are not able to block action under Chandler Act procedures.

[Note: An illustrative case history of the 50-year financial record of the Youngstown Sheet and Tube Company is presented in Case Section D.]

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	267–270	What "role" must the finance department play in cooperating with the production department and the marketing department if modern "roundabout" methods are to succeed?
2	267–270	Distinguish by use of examples a proper exercise of financial control by the finance department and a usurpation of purchasing- and credit-department prerogatives.
3	270–272	In general, what are the relative risks involved and what are the inducements offered in the purchase of preferred stock, rather than common stock?
4	272–273	In general, what are the relative risks involved and what are the inducements offered in the purchase of debenture bonds, rather than mortgage bonds?
5	272–273	Under what conditions might long-term bondholders, who have won iron-clad protective clauses from the company in such matters as closed-end issues, sinking funds, and high financial ratios, defeat their own purposes?
6	273–276	Would you advise a company that distributes vacuum cleaners nationally using door-to-door salesmanship to distribute its securities in the same manner, thus eliminating the investment banker's function? Discuss.
7	273–276	What economic function is served by stock-market-member dealers who earn their livelihood through "buying cheap" and "selling dear"? Do amateur speculators, who are drawn into the market during periods of peak activity, also perform a useful economic function? Discuss.
8	276–277	It has been stated that "commercial banks are most anxious to lend funds to the businessman who doesn't really need a loan for his business." To what extent is this comment justified?
9	276–277	Does the movie caricature of the banker who makes mortgage loans to householders with a view to eventual foreclosure tend to depict, though with exaggerated emphasis, the policies followed by bankers in making industrial loans?
10	277–280	Of what interest are "valuation" and "capitalization" to the management of a going concern, which does not contemplate selling the firm within the foreseeable future?

QUESTION NO.	PAGE REFERENCE	QUESTION
11	277–280	Which alternative technique of valuation would you prefer to use if you were selling out a highly successful business to a large competitor? Discuss.
12	277–280	Would you recommend passage of a law that taxes firms on undistributed profits that are reinvested in the business at the same rate that individual shareholders are taxed on dividends that are declared and paid in cash? Discuss.
13	277–280	Would you recommend passage of a law that requires directors of corporations either to "capitalize the surplus" each year through stock dividends, or else distribute the surplus directly to stockholders in the form of cash dividends? Discuss.
14	280–281	Why might a manufacturer justifiably scrap machinery that is in perfect running order and is completely paid for with the comment that it has become "obsolete"? Might machinery in good repair become obsolete even if the product it turns out is still in heavy demand? Explain.
15	280–281	Why might a strong firm in a stable industry desire to "trade on the equity" far beyond the point of maximum return upon each dollar of new capital invested?
16	281–284	Why is it not appropriate for the average firm to meet its entire working-capital needs by borrowing funds on a short-term loan basis, thus devoting equity capital entirely to fixed capital purposes?
17	281–284	Are financial officers who keep weekly charts of "net working capital," but refuse to recognize the concept called "gross working capital," exercising adequate control over the financial affairs of their firms? Discuss.
18	284–285	As a stockholder charting his return upon investments, would you record a dividend crate of canned tuna or bonded whiskey on your chart at cost to the company delivered, or at retail price delivered, or would you split the difference? Discuss.
19	285–287	Might a firm that lost heavily during the year, because of a shift in markets, still have its current ratio rise from an initial level of 2 to 1 to a year's end level of 4 to 1 or better? If so, of what value is the current ratio?
20	285–287	Might not a great many ratios be assigned varying weights and usefully be combined into a composite ratio indicative of the over-all progress of the firm from year to year? Discuss.
21	287–289	Can you reconcile the spirit of venture, which underlies the private enterprise system, with the quest for security, which leads business men to protect themselves through the use of insurance and hedging?
22	287–289	How could you determine whether a firm's policy in a given instance were one of "self-insurance" or of "no insurance"?
23	289–290	Would you expect creditors and business managers to disagree significantly as to a) the causes of failure of particular business firms and b) the courses of action to be followed in curing a "sick" firm? Discuss.



15 Management Communications and Controls: Accounting and Statistics

A NUMBER OF TOOLS OF BUSINESS have played roles in earlier chapters, although we have not stopped before now to define them or to study them formally. This gradual absorption process contains an element of "learning by doing." It will enable us to proceed rapidly at the present time. The business tools of accounting, statistics, budgets, and reports, which we shall take up now, are absolutely essential to the conduct of economic life as we know it. Administration itself could not be carried on without these tools.

Chapters 1–3 draw heavily upon statistical, as well as upon descriptive, data in picturing the growth and development of the U.S. economy over the years. Frequent reference to and employment of the basic tools of business occur in chapter 4 dealing with R.C.A. G.E.'s employment of accounting, statistics, budgets, and reports for departmental, as well as over-all, planning and administration is touched upon indirectly in chapters 6 and 7. The use of all four major tools, and particularly the analytical report, is observable in chapter 8 on forms of business organization. The importance of figures within business administration for communication and control purposes stands out in chapters 9 and 10 on production management. The roles of statistics and reports in personnel relations are developed in chapter 11. Chapters 12 and 13 on marketing feature statistical figures for research purposes. They also indicate the use of accounting and budgetary figures for control purposes and the use of reports in planning and in implementing plans. In chapter 14 on finance, the tools of accounting and statistics come into their own as indispensable aids for business management. This current chapter will deal systematically with the tools of accounting and statistics. Chapter 16 will develop the major uses of budgets and reports.

Photograph at top of page: A typical installation of IBM electronic and electric punched card accounting machines can be used to prepare a wide variety of accounting and statistical reports. (*International Business Machines Corporation*)

I. ACCOUNTING

Accounting has been defined as the "art or system of making up or stating accounts" and as "the body of scientific principles underlying the keeping and explanation of business accounts." The definition states that "accounting explains the results furnished by the bookkeeper and draws the necessary inferences as to the condition and

conduct of the business." [1] Another definition is "the art or practice of keeping, auditing, and adjusting financial records." [2] Between them, these definitions shed considerable light upon the topic that concerns us here.

Accounting is more an "art" than a mathematical science. The business accounts, with which it deals, comprise the financial or monetary records of an enterprise or an organization. Accounting is also described as a "system" or a "practice." In this sense, it draws upon some of the useful methods that characterize the more exact sciences. Accounting practices are classified and standardized in many important respects. The body of principles underlying accounting practice is a body of commonly agreed upon conventions and practices, however, rather than a body of fundamental truths. The scope for human judgment exercised by the accountant, as he sets up the system to be used by the bookkeeper and as he interprets the figures cumulated by the bookkeeper, is wide indeed.

THE DEVELOPMENT OF ACCOUNTING

Isolated accounting practices date back to the earliest recorded times. In ancient tribes, individual traders kept track of their transactions by tying knots, notching sticks, or piling stones long before figures were developed for arithmetic tallies. Ancient rulers had their aides keep rough count of taxes paid and of soldiers levied. Merchants throughout the ages have counted their wares and, hence, have accounted for their gains and losses.

Double-entry bookkeeping, the characteristic feature of modern accounting, probably had its origin in 15th-century Italy. At any rate, a mathematical treatise by a monk named Luca Paciola, published in Venice in 1494, contained a section describing double-entry bookkeeping as a new art.[3] The fundamental concept therein expressed has endured through five intervening centuries.

Double-entry bookkeeping involves the recording of two closely related sets of entries for every business transaction. Single-entry bookkeeping, in contrast, might merely list the dollar value of items bought or sold. If accurate entries were made at every stage, these single-entry listings would, through addition and subtraction, yield an exact statement of what transpired in the business. Errors and omissions would be difficult to detect under the single-entry system, however, for there would be no convenient cross-check upon accuracy. Mere repetition of figures and duplication of arithmetical computations in a second set of single-entry books would not be of major value, for both sets of books would be kept in an identical manner. If two parallel, but distinct, sets of facts are recorded in an integrated double-entry bookkeeping system, however, a powerful cross-check factor is added to the picture.

One set of records describes items of wealth that the firm either owns (+) or owes (−). Positive entries for what one owns are called assets. Negative entries for what one owes are called liabilities. These entries can show, in any detail desired, various specific assets, such as cash, accounts receivable, inventories, equipment, buildings, land, and patents, owned by the com-

[1] Definition of term "accounting":

ac·count'ing (ă-koun'tĭng), *n* **a** The art or system of making up or stating accounts; the body of scientific principles underlying the keeping and explanation of business accounts. **b** The application of such principles in practice; an instance of applying such principles; the act of stating accounts. See COST ACCOUNTING

Syn. — ACCOUNTING, BOOKKEEPING. BOOKKEEPING deals with the work of making proper entries and proper balances ACCOUNTING explains the results furnished by the bookkeeper and draws the necessary inferences as to the condition and conduct of the business, a function emphasized in the phrase *public accountant.*

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[2] *The Winston Simplified Dictionary,* Advanced Edition Philadelphia: The John C. Winston Company, 1930.

[3] Henry Rand Hatfield, Thomas Henry Sanders, and Norman Lee Burton, *Accounting Principles and Practices,* page 17. New York: Ginn and Company, 1940.

pany. The entries can also cover, in detail, the accounts payable, notes payable, bonded debt, and other liabilities owed by the company.

A second set of records shows how many dollars the owners of the enterprise are worth, by recording their original investment and by detailing any positive or negative changes in this amount with the passage of time. The proprietor may, for instance, record original worth as 10,000 shares of common stock with a total value of $100,000 and 20,000 shares of preferred stock with a total value of $400,000. If the firm earns a profit during the first year as a result of transactions completed involving various assets and liabilities, such net income as is retained within the firm will be recorded in an "earned surplus" account. In time, the proprietorship interest or net worth of the owners might rise from the original $500,000 figure to a new figure of $1,000,000. At this point a comparison of assets and liabilities will show $1,000,000 more in assets owned by the proprietors than in liabilities owed by them.

In double-entry bookkeeping, each transaction recorded involves an equation, rather than a single arithmetical figure. If a new machine is purchased on credit, for instance, the entry showing the increase in assets owned will be balanced by an entry showing the increase in accounts payable on the liability side. When the firm pays off this debt, the entry reducing cash by the amount paid out on the asset side is balanced by an entry reducing accounts payable by the same amount on the liability side. If cash is paid directly for a new machine, the increase in the asset account for machines owned is balanced by a decrease in the asset account for cash on hand. If new funds are solicited from investors for the purpose of buying more machines, the increase in cash on hand on the asset side is balanced by an increase in stock outstanding in the net worth or proprietorship section of the books.

The fundamental accounting equation illustrated above may be formulated as follows:

Assets − Liabilities = Proprietorship

Thus, a man who owns two machines costing $1,000 each, but who does not have any debts, is worth $2,000. If this man borrows funds for the purchase of two additional machines, his assets rise to $4,000. He incurs a liability account of $2,000, however, and is still worth just $2,000 as proprietor of the enterprise. This equation may be expressed as follows:

$4,000 − $2,000 = $2,000

In summarizing a firm's financial position on a balance sheet, it is customary to show things owned in the left-hand column and to show things owed and net worth in the right-hand column. The fundamental accounting equation is thus expressed in an alternative form as follows:

Assets = Liabilities + Proprietorship

Retaining our previous illustration, we may alter the specific equation to read as follows:

$4,000 = $2,000 + $2,000

In the actual balance sheet, our proprietor will present his accounts as follows:

Figure 15–2

BALANCE SHEET OF FIRM X
AS OF JUNE 30, 1952

Assets		*Liabilities and Proprietorship*	
Machines	$4,000	Liabilities	
		Accounts Payable	$2,000
		Proprietorship	
		Capital	2,000
	$4,000		$4,000

The balance sheet. The balance sheet illustrated above in simplified fashion indicates the financial position or condition of a firm as of a particular instant, *e.g.*, as of the close of work on a particular cut-off date, June 30, 1952. The balance sheet consists of a classified list of assets, liabilities, and proprietorship or net worth items whose individual totals are drawn off in summary fashion from detailed ledger accounts. The "balance" inherent in the balance sheet follows from the nature of the fundamental accounting equation referred to above: Assets minus liabilities equals proprietorship or, otherwise stated, assets equal liabilities plus proprietorship.

The classification system used in balance sheets usually lines accounts up within categories in order of their liquidity or their nearness to conversion into cash. Thus current assets, which become cash within one year, are divided into accounts called 1) cash, 2) negotiable securities, 3) accounts receivable, 4) notes receivable, and 5) prepaid expenses (*i.e.*, expenses already paid but that do not really become charges until some future date, *e.g.*, an insurance premium paid a year ahead). Fixed assets, which remain in their original form over a goodly number of years, are divided into 1) land, 2) buildings, 3) machinery, 4) equipment. 5) fixed investment assets, 6) intangible items, such as goodwill and patents, and 7) deferred charges (*i.e.*, costs incurred that are to be charged off gradually over future periods, *e.g.*, organization expense incurred in launching the firm).

On the liability side, current liabilities, which fall due within a year, include accounts payable to trade creditors, notes payable to banks or individuals on short-term loans, funds owed to employees as accrued wages (*i.e.*, money for past services to which employees have a legally enforceable claim), and funds owed to the government as accrued taxes. Fixed liabilities, to be liquidated over a long term of years, include such items of funded debt as debenture bonds and mortgage bonds. A number of reserve accounts may be placed in the liabilities section to cover anticipated obligations, currently unknown as to exact amount. A reserve for legal liability in pending suits might be one example.

The proprietorship or net worth section of the balance sheet may divide the interests of the owners into the following types of accounts: 1) capital stocks, including preferred and common issues, 2a) surplus, including capital surplus paid in originally by the owners, revaluation surplus derived from an upping of the book value of assets, and earned surplus arising from net income earned and retained in the business, and/or 2b) deficit, consisting of the various surplus accounts in negative quantities, and 3) reserves, including, for example, accounts to cover possible inventory losses in future periods or to smooth out future dividend payments even if times become temporarily uncertain.

A single balance sheet is of value, as it reveals the general magnitude of the enterprise, the categories in which various assets are being invested, the general sources of funds used in operations, and the general financial condition of the enterprise. Various balance-sheet ratios may readily be constructed. A series of balance sheets will be very much more helpful for financial analysis than any one report alone. The trend of events from one cut-off date to another may be plotted by comparison of succeeding statements. Still further insight may be derived from study of comparative balance sheets when they are coupled with a second major type of financial report, known as the income statement or the profit-and-loss statement.

The profit-and-loss statement. The profit-and-loss statement describes the profitableness of a company's dealings during the period falling between successive balance-sheet statements. Whereas the balance sheet reveals but an instantaneous flash-photo view, the profit-and-loss statement presents a moving-picture narrative of company financial activities over a significant period of time. All firms draw up annual

statements of income and expenses for report purposes. Many firms draw up quarterly and monthly statements, as well, for internal control purposes. The profit-and-loss statement serves as a useful point of departure in the analysis of strengths and weaknesses of operations. Numerous financial ratios may be drawn off from figures contained therein. Comparison of reports for successive periods increases greatly the values to be derived from this procedure.

If the proprietor of Firm X inaugurated operations on July 1, 1952, his 6-month income statement, issued as of December 31, 1952, might reveal the following critical data:

Sales for the 6-month period totaled $24,000, after allowances of $1,000 for freight and returns were subtracted from a gross sales figure of $25,000. The cost of these goods sold was $20,000. This figure was arrived at after costs recorded for the period were totalled and then adjusted for the difference in beginning and ending inventory. The gross profit of $4,000 was reduced by selling and administrative expenses of $2,500. The sum of $100 derived from rental of a spare machine added to the profit figure. Interest charges of $200 and a provision of $400 for taxes reduced the net figure still further. As far as the proprietor could tell at this time, six months of operations had resulted in a net profit after taxes of $1,000 for the firm.

In the actual profit and loss statement our proprietor would present these items as follows:

Figure 15–3

PROFIT AND LOSS STATEMENT OF FIRM X [4]
FOR THE SIX-MONTH PERIOD ENDED
DECEMBER 31, 1952

Gross Sales		$25,000
Less Freight and Returns		1,000
Net Sales		$24,000
Cost of Goods Sold		20,000
Gross Profit		$ 4,000
Selling and Administrative Expenses		2,500
Net Profit before Other Income and Charges		$ 1,500
Other Income:		
Income from Rental of Spare Machine		100
		$ 1,600
Other Charges:		
Interest on Debt	$200	
Provision for Income Taxes	400	
Total Charges		600
Net Profit for Period to be Carried to Surplus		$ 1,000

The major categories contained in the profit-and-loss statement may include the following detailed items:

1. Sales: gross sales of service and product, reduced by outward freight, returns of items, discounts granted, allowances agreed upon, and other adjustments, yielding a figure for net sales.
2. Cost of Goods Sold: outlays for manufacturing costs, such as labor, materials, and indirect expenses, including heat, light, power, supplies, depreciation expense, insurance premiums, and property taxes.
3. Selling and Administrative Expenses: salesmen's salaries, commissions, and expense accounts, advertising expenses, and sales promotion expenses, on the one hand, and executive office salaries, supplies, telephone, travel, and miscellaneous expenses, on the other hand.
4. Other Income: nonoperating income, such as interest from investments or income from operations not directly related to the firm's main business.
5. Other Charges: nonoperating expenses, such as interest on funded debt or on notes payable, and the reserve for income taxes or other reserves.

The net income remaining after the above adjustments may either be distributed to stockholders in the form of current assets or stock shares, or else added to earned surplus.

The journal and the ledger. Profit-and-loss statements and balance sheets are made up

[4] See form suggested by American Institute of Accountants, *ibid.*, page 56.

from information contained in the ledger accounts of the firm. The ledger, in turn, is posted periodically from original entries made daily in the journal book kept by the firm. Large enterprises may use a number of specialized ledgers, eliminate the traditional journals, and reduce manual bookkeeping labor through use of accounting machines. Nevertheless, the fundamental purposes of the journal and the ledger remain essentially unchanged. Hence, we shall continue to focus upon the journal and the ledger at this time.

The journal is important in accounting as a book of original entry. Entries made in the journal chronicle each transaction completed by the firm. These entries also serve as instructions as to what entries are later to be made in the ledger accounts to record the effects of each transaction in classified fashion. The journal also aids in the process of maintaining an equality of debits and credits. Each page of the journal is customarily totaled up and balanced before ledger entries are undertaken. As a book of original entry kept on a daily basis, the journal carries considerable weight in court as evidence of the date on which a transaction occurred.

We may visualize the operation of the journal by assuming that Firm X has completed the simple transaction of buying a used milling machine for $1,000 in cash on October 3, 1952. The journal entries recording such a happening would read as in Fig. 15–4.

FIRM X JOURNAL — PAGE 27

1952		ACCOUNT	LEDGER PAGE	DEBIT	CREDIT
Oct	3	Machinery	16	$1,000 00	
		Cash	5		$1,000 00
		Purchased milling machine from A B Merrill			

Figure 15–4.

The debit (+) entry for the machinery asset account is balanced by a credit (−) entry for the cash asset account. The bookkeeper posting the journal is mentally set to debit Machinery and to credit Cash under date of October 3. The possibility of an undetected posting error is slight under this arrangement. To facilitate complete and accurate posting, the bookkeeper records the number of the ledger page involved beside each journal item and the number of the journal page beside each ledger item. Moreover, the books of original entry are available for inspection at any time. We shall obtain additional experience in the use of the journal in the practice set that appears in Case Section E.

The ledger to which journal entries are posted is a collection of all of the accounts used in the particular business whose transactions are being recorded. The journal entries are formulated in terms of accounts set up in the ledger. Occasionally a new situation will arise calling for the opening of a new ledger account. A descriptive title is given to the account, and it is simply added to the asset, liability, or proprietorship section of the ledger.

Retaining the simple illustration referred to in the discussion of journals, we may set up and post ledger accounts as in Fig. 15–5.

FIRM X LEDGER — CASH — PAGE 5

1952			DEBIT	1952			CREDIT
Oct	1	Balance	5,574 80	Oct	3	J27	1,000 00
	8	J32	45 55		4	J29	50 00
					6	J30	75 50

FIRM X LEDGER — MACHINERY — PAGE 16

1952			DEBIT	1952		CREDIT
Oct	1	Balance	3800 00			
	3	J27	1000 00			

Figure 15–5.

The credit entry for cash paid out, on page 5, is balanced by a debit entry for machinery acquired, on page 16. Both en-

tries come under date of October 3, and are keyed back to page 27 of the journal for ready reference. If the accountant supervising the books desired a closer tie-in between accounts, he might direct the bookkeeper to take the extra time to write the word "machinery" in the blank space near the $1,000 entry in the cash account. He might also have the identifying word "cash" and/or the specific make, size, and manufacturer's number identifying the machinery purchased written in beside the $1,000 entry in the machinery account.

It may be noted that, as a preliminary step in "closing" the books when the time comes to draw up balance sheet and profit-and-loss statement reports, the bookkeeper adds up posted debits and credits to arrive at a balancing figure for each account. The Cash on Hand, the Machinery Owned, the Accounts Payable, and the Proprietorship Interest, for instance, would be listed in the balance sheet. The Net Sales, the Cost of Goods Sold, the Selling and Administrative Expenses, and other such accounts, would be listed in the profit-and-loss statement.

[Note: An accounting practice set is presented in Case Section E.]

II. STATISTICS

Statistics has been defined as "the science of the collection and classification of facts on the basis of relative number or occurrence as a ground for induction" and as the "systematic compilation of instances for the inference of general truths," [5] and as "the science which deals with the treatment and interpretation of . . . numerical facts, systematically collected and classified, regarding a large group of persons or things, as a whole nation, a certain industry, forests, or the like." [6] Once again we may pay our respects to the dictionary editors for launching us propitiously upon our investigation of a new subject.

Statistics is here regarded as a "science" (or, preferably, as a "scientific method"), which, in its methodology, can go beyond a "mere art." Statistics contrasts with accounting in this respect. The body of principles underlying statistics rests far more solidly upon mathematical axioms (self-evident truths universally received) and established mathematical theorems (general statements that have been proven). Although statistics itself is a coldly scientific tool, the human element enters into the picture just as soon as the tool is picked up for manipulation by the individual statistician. It is an axiom, as well as a truism, that "figures don't lie, but liars figure." It should be pointed out that such happenings need not be "calculated lies." They might be equally damaging to the cause of objective truth, however, if they are simply "miscalculations" arising from the manipulation of statistics by unskilled hands. Even if the basic statistics at issue in a given case are accurately presented, the need for interpretation of the meaning of these statistics in light of the total situation casts the "average" statistician in the role of "artist" fully as often as in the role of scientist.

DEVELOPMENT OF STATISTICS

The scientific tool of statistics has been developed and exercised by untold thousands of persons working over the centuries in diverse fields of the physical, the natural, and the social sciences. Statistical data were collected in rudimentary form for rulers of

[5] Definition of term "statistics":

sta·tis'tics (stə·tĭs'tĭks), *n.* [From *statistic*; cf. F. *statistique*, G. *statistik*.] **1.** (Construed as *sing.*; see -ICS.) The science of the collection and classification of facts on the basis of relative number or occurrence as a ground for induction; systematic compilation of instances for the inference of general truths; the doctrine of frequency distributions.
2. (Construed as *pl.*) Classified facts respecting the condition in various respects of the people in a state, or respecting any particular class or interest; esp., those facts which can be stated in numbers, or in tables of numbers.

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Copyright, 1934, 1939, 1945, 1950
by G. & C. Merriam Co.

[6] *The Winston Simplified Dictionary*, Advanced Edition. Philadelphia: The John C. Winston Company, 1930.

states long before professional scholars developed the arts and sciences in a formal sense. These rulers of states may also have come to use rudimentary statistics themselves for recreational purposes in "games of chance." Both these governmental and nongovernmental uses of statistics have, as we well know, continued at a high activity level to this day. Important applications of statistics have gradually evolved in the subject fields of political science, economics, sociology, education, psychology, and business administration, as well as in the more exact sciences.

The large-scale use of statistical data in business administration is in good part a product of the 20th century. It is more correct to ascribe this development of statistics in business to changes in business organization that have followed the industrial revolution, however, than to associate it with any particular century. In the days when businesses were small, owner-operated, and local in scope, the tool of statistics was not of vital importance. Men managed business affairs on a highly personalized basis. The plant was there before the owner's eyes. His employees were at their benches right before him. Their products were few and simple to count. Their market was simply their neighbors in and about the local community. The vital data affecting the business situation were largely known. Businessmen were not well versed in the use of numbers during this period. They did not feel this "lack" as a conscious want.

About the turn of the century—with the spectacular growth in size and complexity of business corporations, of business plants, and of business markets—the need for paperwork of all types to aid in managerial control began to be felt. The scientific tool of statistics, which had been popularized by government personnel in census reports and in agricultural studies, was increasingly put to work in the compilation of business data. Newly-formed business trade associations joined with government departments and government regulatory bodies in the compilation of current data concerning key industries within our economy.

The outbreak of World War I gave great impetus to this movement. The sphere of centralized governmental activity greatly increased. Information was desperately needed by businessmen and by government administrators alike, if they were to put available resources effectively to work for the war effort. The shortages confronting our straining industrial machine wiped out the complacency that had heretofore existed with reference to the true condition of national plant, machinery, labor force, materials, and product.

The return to "normalcy" after World War I threatened for a time to undo these gains in knowledge of statistical data. The severe "inventory depression" of 1921 and the keen appreciation by Secretary of Commerce Herbert C. Hoover of the role that adequate statistics could have played in heading off this situation had important consequences. Secretary Hoover established the *Survey of Current Business* publication within the Department of Commerce to collect and publish under one cover the key statistics that might serve as a guide to action by business executives. Business trade associations also joined in the movement by collecting industry data on a voluntary basis. Each year since 1920 has seen a cumulative piling and a further broadening of data-collecting activities.

The use of current statistics by business executives was a new concept that had to be "sold" to many business leaders of the post-World War I era. Gerard Swope, then president of G.E., included the following testimonial for industrial statistics in a talk he delivered upon being elected president of the newly-formed National Electrical Manufacturers' Association:

> In my opinion the greatest immediate good will result to electrical manufacturers from this association if it brings about the tabulation and dissemination of industry statistics and secures the adoption of a uniform cost-accounting system by all manufacturers. Statistics and cost accounting are fundamental to all in-

telligent conduct of any business. An essential requirement for successful management today is prompt and accurate information on available business and market conditions. Another essential is a knowledge of costs of manufacture. These two business aids arm an executive with the tools for doing business successfully. . . . The collection of industry statistics is one of the great tasks of a trade association. These statistics must be made available to the public as well as to members of the association and must conform to certain restrictions, but not to a degree where their benefit to the industry is impaired. Statistics as to production, quantity produced, shipments, sales, orders received, unfilled orders on hand, stocks on hand, and of employment can be collected and disseminated.[7]

The Great Depression of 1929-33 constituted a tremendous setback for advocates of business forecasting, such as Hoover and Swope, just as the Truman victory over Dewey in 1948 was a startling setback for election pollsters, such as Gallup and Roper. Nevertheless, the need for use of the basic tool of statistics in business forecasting and in opinion sampling has continued to grow with scarcely a break in stride. Practitioners of the applied science of statistics have tended to redouble their efforts, upon committing gross errors. At the same time, business leaders have tended to be alerted, by the consequences of these major "misses," to the need for them personally to acquire a rudimentary understanding of the tool of statistics in their own right.

Some of the more important applications of current statistics to the needs of business management, as analyzed by Professor Joseph L. Snider of the Harvard Business School, are summarized below:

1. Production statistics show what is being added to an industry's products by current operations. They may be used a) in comparing present production with previous months or with monthly averages of previous years so as to discern the *trend* of production for the industry, b) in comparing this year's seasonal movement of output against the normal seasonal movement of the industry, c) in comparing changes in one's own firm's output with changes in the total for the industry, d) in determining the "normal" growth of the industry over the years, e) in comparing changes in relative rates of production of competing lines within the industry, f) in measuring the effect over time of actions carried out by management, and g) in forecasting shipments to be made in the near future.

2. Plant capacity figures measure the possibilities of production by a firm. They may be used a) to indicate the extent to which production can still be increased without further construction of facilities, b) to indicate the relationship of actual production to potential production in any given year, past or present, c) to indicate the relationship between potential production and potential demand for the industry's products under various circumstances, and d) to obtain comparable figures (by relating production to capacity) when varying numbers of manufacturers report production statistics from month to month.

3. Employment figures indicate the number of persons on the payroll as of a certain date or, if detailed, the number of man-hours actually worked. They may be used a) to show whether the firm and the industry are taking on or laying off workers, b) to indicate whether the trend of employment is following the trend of production, c) to show seasonal changes in employment that might be smoothed out, and d) to show labor turnover.

4. Shipment figures show the disposition of products as they leave the plant. They may be used a) to indicate the rate of consumption of a product, as they disregard production for stock and focus upon orders delivered, b) to show seasonal variations in the rate of consumption, c) to show whether production is greater or less than consumer use at a given moment, d) to show the geographical areas to which goods are shipped, e) to indicate the relative importance of various districts, and f) to show areas in which specific products may be in short supply or in which sales may profitably be sought.

5. Inventory or stock figures show the resources tied up in materials flowing through the productive process. They may be used a) to indicate the extent to which the industry is

[7] *Electrical World*, December 4, 1926, and quoted in Joseph Lyons Snider, *Business Statistics*, page 7. New York: McGraw-Hill Book Company, 1932.

supplied with or in the market for its raw materials, b) to indicate the number of days' supply of materials on hand by comparing stocks with current production, c) to compare a firm's inventory position with that of the industry, and d) to indicate the finished goods position of the industry.

6. Statistics on new orders accepted indicate what the trend of production may be in the future. They may be used a) as a sensitive indicator of changes in demand conditions, b) as a sensitive indicator of the total scope of active demand, as orders booked are not limited by actual plant capacity and do not carry over decisions made in the past, c) to show whether a firm is obtaining its desired share of the industry's business, d) to show whether production and shipments by the industry are above or below current demand, e) to show the relative strength and weakness of buying in specific sales districts, and f) to indicate changes in demand for different grades and sizes of products.

7. Price data show the effects of supply and demand within the industry. They may be used a) to compare the firm's prices with the average for the industry, b) to show the differentials prevailing between grades of the product, c) to show the trend of prices within the field, and d) to show seasonal variations in prices.

8. Statistics for related industries that supply the firm's industry or that consume the products of the firm's industry are of prime importance in indicating future developments. They may be used a) to indicate the proper timing of actions contemplated by management, b) to indicate the need for new plans by management enabling the firm to adjust satisfactorily to external changes.[8]

It may readily be observed that current business statistics are not "far-off" abstractions, of interest only to the arm-chair strategist. These data form one of the major bases for current action by all levels of management in all departments of the firm. The data are frequently assembled by middle management men for presentation in summary form to top management. In many large firms, specialists in statistics are hired to perform these functions on a staff basis for the convenience of line department officials. The close and continuing connection between data analysis and business policy-making cannot be too strongly emphasized. The very term "*current* business statistics" indicates the importance and vitality of the operations here involved. While a majority of all business firms do not yet have professional statisticians in their employ, almost all going concerns are heavily engaged—in some cases, despite themselves—in the business of working with statistics.

Statistical data and statistical techniques are not restricted to the over-all compilation of current business statistics. Some of the most important specific uses of statistics involve problems that are almost entirely internal with respect to the firm. Numerous other statistical problems contain a judicious mixture of internal and external strains. The following illustrations are evidence of the usefulness of statistics for internal control:

1. Statistics are used within the production department a) for the preparation of production schedules, b) for the determination of economic production-lot sizes for various types and sizes of product, c) for control of purchasing policies and procedures, d) for motion-and-time studies, e) for studies of production costs, and f) for control of quality.

2. Statistics are used in the marketing department a) for the determination of sales areas and quotas, b) for the determination and control of advertising policies, and c) for the pricing of various types of orders.

3. Statistics are used in the finance department a) for preparation of financial statements, b) for ratio analysis, c) for control of credit policies, and d) for determination of insurance coverage and risk policies.

4. Statistics are used in the personnel-relations department a) for preparation of personnel reports to executives and to operating departments, b) for job evaluation and merit-rating studies, and c) for wage administration.[9]

[8] Snider, *op. cit.*, pages 11–25.

[9] See Martin A. Brumbaugh and Lester S. Kellogg, *Business Statistics*, page 3. Chicago: Richard D. Irwin, Inc., 1941.

Business statistics should not be confused in these instances with the mere use of numbers. The use of numbers in and of themselves may involve simple arithmetic. As our earlier definition indicated, statistics is the science of the collection and classification of facts on the basis of relative number and occurrence *as a ground for induction.* It deals with the treatment and interpretation of numerical facts, rather than with the mere addition and subtraction of the numbers themselves. Our definition stated that statistics dealt with a large group of persons or things, such as a nation, an industry, or a forest. Statistics does, indeed, endeavor to draw attention to the condition of the forest itself, in preference to the unquestioned merits of certain individual trees. It seeks to improve the perspective of the viewer by classifying instances. Yet, statistics carefully refrains from converting a natural forest into an apple orchard by uprooting the trees to plant them row on row. In this and other respects, statistics affords a scientific method that is practicable and utilitarian.

METHOD OF BUSINESS STATISTICS

The method of approach used in business statistics is that of problem-solving. Although statistical method constitutes an integrated "whole," it can be broken down into component sections for purposes of academic analysis. Six major steps in statistical investigation, as identified by Professors Martin A. Brumbaugh and Lester S. Kellogg, may be listed as follows:

I. Statement of the problem
II. Preliminary planning of the investigation
III. Collection of data
  A. Library sources
  B. Direct sources
IV. Analysis of data
  A. Editing of collected information
  B. Tabulation
  C. Ratios
  D. Graphs
  E. Measures of central tendency
  F. Measures of dispersion and skewness
  G. Index numbers
  H. Time series analysis and application
  I. Correlation and variance
  J. Tests of reliability of samples
V. Interpretation and application of the results of analysis
VI. Preparation of a report of the completed investigation.[10]

Our excursion into business statistics for the remainder of this chapter will consist of a step by step exploration of the six-step process set forth above.

1. STATEMENT OF THE PROBLEM

A businessman cannot take effective steps directed at the solution of a problem unless he first endeavors to define the problem that presumably confronts him. We explore techniques for solving business problems at some length in chapters 16 and 18. Suffice it to say that the business statistician, in common with other businessmen, characteristically approaches case problems by 1) gathering *symptoms* of "trouble," 2) determining the *causes* of these difficulties, and 3) stating the *central problem* concerning which action is desired. Before the businessman can start his investigations, he must make a first effort to visualize and verbalize the problem area as a rough guide to further action.

2. PRELIMINARY PLANNING

The task of defining the problem entails a study of the various ingredients with which the problem-solver is to work. There follows a "churning up" process, during which a full array of major and minor points comes up for preliminary investigation and classification. During this period,

[10] *Ibid.*, page 48. The basic approach used in the remaining sections of this chapter is that of Brumbaugh and Kellogg.

the procedures that the investigator may find most profitable to employ may be lined up. The outcome of all these activities should be an orderly statement of the problem to be studied and of the methods to be used in carrying out the investigation. The proper sequence and timing of moves called for should receive detailed attention by the planner of the investigation, as well as the specific nature of individual steps.

3. COLLECTION OF DATA

The planning phase, described above, concerns itself initially with problems of collecting data. Internal data (data originating within the firm) may usually be obtained in usable form directly from the records kept by management for control purposes. Sales, accounting, production, and personnel records are examples of this type. External data (data originating outside of the control of the firm) are obtained from two principal sources: a) published or library material, and b) material gathered first-hand by the investigator directly at the source.

a. Published or library sources. If the needed data already exist in usable form, it would be needless duplication of effort for the statistician to gather these same data directly for a second time. Some of the early steps taken by the investigator will include a preliminary scanning of various categories of published source material to determine whether or not reliable data already exist in useful form. Even if complete data cannot be found in a search of library sources, such material as is available will give clues concerning useful methods of investigation and point up areas in which additional research will be necessary.

b. Direct sources. If data must be collected directly in the field, the investigator is faced with the problem of organizing and carrying out the collection process by application of statistically sound techniques. In such cases, either the census or the sample method may be used.

1) *The Census Method.* The census method of complete enumeration of the total universe or field is the more accurate method and may be used if it can be carried out at reasonable cost. Data gathered each decade for the government census involve interviews with representatives of all the families in the United States. The Census of Manufacturers and the Census of Business also are based on a saturation count. Data derived from tax returns likewise are based upon a complete enumeration of all instances.

2) *Sampling.* In most situations, a complete census count would be prohibitive in cost. Estimates must then be substituted for actual figures by use of sampling techniques. The sample taken may either be a random one, with no effort to choose characteristic items, or it may be a controlled sample, which is adjusted to conform with known characteristics of the universe being sampled. Sampling, as a statistical technique, draws its validity from the "principle of statistical regularity," namely that "a sample selected at random from a universe will exhibit the characteristics of the universe, even though the number in the sample is small compared with the universe." [11] In the well-known coin tossing experiment, the percentage deviation of actual "heads" and "tails" from the expected 50-50 division becomes progressively smaller as the size of the sample increases. The student may conduct his own experiment with a suitable supply of coins and with as many instances as his patience will permit. Illustrative results are given in Figure 15–6 below.

If this experiment were to be continued indefinitely, a point might eventually be reached at which the variation from expected results would approach 0.000 per cent. For most purposes, however, a few thousand tosses would constitute an adequate sample for establishing the charac-

[11] *Ibid.*, page 70.

Figure 15–6
COIN TOSSING EXPERIMENT

Number of Coins Tossed	Actual Tallies For Each Sample Heads	Tails	Cumulative Data Heads	Tails	Expected Division (heads & tails alike)	Per Cent Variation (actual from expected)
1st 1,000	522	478	522	478	500	4.400
2nd 1,000	506	494	1,028	972	1,000	2.800
3rd 1,000	512	488	1,540	1,460	1,500	2.667
4th 1,000	487	513	2,027	1,973	2,000	1.350
5th 1,000	517	483	2,544	2,456	2,500	1.760
6th 1,000	499	501	3,043	2,957	3,000	1.433
7th 1,000	491	509	3,534	3,466	3,500	0.971
8th 1,000	516	484	4,050	3,950	4,000	1.250
9th 1,000	482	518	4,532	4,468	4,500	0.711
10th 1,000	490	510	5,022	4,978	5,000	0.440

teristics of the universe being investigated. Even if we did not know beforehand that there existed a "normal" outcome of half heads and half tails in this instance, we should be led, by our stabilized results, to assert that such was very probably the case. The tossing of 10,000 coins constitutes a very small sample indeed of the theoretical universe of an infinite number of coin tosses. Nevertheless, we may judge our cumulative sample an adequate one for most purposes, because it tended to stabilize around the 50-50 figure and soon established a percentage variation of 1 per cent or less. The ten independent samples of 1,000 coins apiece all tended to hover around the 50-50 division point as well, so there would be little reason to question the validity of the principle being established.

If little were known about the distribution of characteristics in the universe being sampled, an uncontrolled sample would have to be used. For instance, if a firm could furnish an investigator only an alphabetical list of its employees for a study of employee attitudes, a large percentage of the group would have to be approached in interviews or by mail in order to determine the views of a representative sample. If the firm were able to classify the names by sex, age, years of service, department, and position, a much smaller sample, faithfully reflecting the over-all composition of the working force, would probably reflect the composite views of the working force as well. The size of the sample needed might well be determined by dividing the group to be approached into a number of comparable subsamples, each of which could be added to the tally sheet in much the same fashion as the coin groups in Fig. 15–6. The size of the sample required would, in most cases, be considerably less than 10 per cent of the universe being studied.

Determination of the nature and size of the sample required in direct collection of data constitutes just one of the essential steps in the data-collecting process. Key steps, which may merely be listed in this abridged study of the topic, include the following:

"(1) the provision of physical equipment, (2) a preliminary study of the field, (3) the choice of cases for the sample, (4) preparation of agents' schedules or mail questionnaires, (5) the selection and training of a staff, (6) supervising the work of collection." [12]

4. *ANALYSIS OF DATA*

The analysis of data collected constitutes the very heart of the science of statistics.

[12] *Ibid.*, pages 92–117.

Raw data must be processed before the finished result can be correctly interpreted and applied to the case at hand. A number of important steps and techniques are involved in the analytical process. We shall briefly sketch the problem area at this time.

a. Editing of collected information. Raw data seldom are procurable in just the right form for the particular study at hand. The experienced investigator knows that he will ordinarily improve the accuracy and completeness of his data significantly by investing time and energy in a painstaking editing job. Omissions and gross errors are relatively easy to detect. Inconsistencies in data submitted sometimes are more subtle in their disguises. In some instances, answers to related questions may be in conflict. In other instances, the questions themselves may have been misconstrued by the respondent. The investigator may also aid his cause by using approved methods for tabulating and tallying the raw data in convenient form for summarization and analysis. The construction of useful work sheets and tally sheets is in itself a task that merits close attention by the investigator.

b. Tabulation. The tabulation of statistical data involves the listing of numerical information in vertical columns and in horizontal rows. Tabulation is more than a mere space-saving device for bringing data together in orderly fashion, although it does serve this function well. The data are arranged in tabular form in conformity with some previously established plan of classification. The process of tabulation thus facilitates later analysis of the data that are gathered.

One fundamental rule for classification is that the variable characteristics being studied be classified into mutually exclusive classes. These characteristics may later be cross-classified, but the basic categories themselves should not be vague with respect to mutual exclusiveness. The data to be tabulated in conformity with a classification system may be presented either in the form of a primary table or a derived table. A primary table presents the assembled data in the original units. A derived table presents the end results of analysis of the original data by statistical methods. For instance, a table showing percentage changes instead of absolute amounts of change would be a derived table.

If a large-scale, statistical operation is undertaken, either in number of data cards used or in number of cross-tabulated replies anticipated, the McBee Keysort system or the I.B.M. Punch Card system for mechanical tabulation may effectively be called into play.

c. Ratios. Ratios are to be found everywhere in common usage. For instance, the ball player who hits safely once in three trips to the plate has a ratio of 1 to 3, which is expressed in the box score column as .333 in the row that records his individual performance for the day. The savings bank that advertises a 2 per cent return on vacation club accounts is really expressing a ratio of 2 cents interest for every 100 cents of principal invested for a year. Our income-tax returns also present a ratio, namely, what we may keep out of what we earn.

A statistical ratio may be constructed in very simple fashion. For example, a company that has $100,000 invested in machinery and has 20 shop employees, may wish to express these two related facts in simplified fashion. The base figure in this comparison is customarily 1 unit, 100 units, or some other power of 10 units. In this case, we shall use 1 employee as our denominator unit. The unknown figure, "x" dollars, becomes our numerator. The statistical ratio is derived in the following manner:

(1) $x is to 1 employee as $100,000 is to 20 employees.
(2) $x \cdot 1 = 100{,}000 \cdot 20$
(3) $20x = 100{,}000$
(4) $x = 5{,}000$
(5) The company has a machinery investment ratio of $5,000 per shop employee.

It may be noted that the above illustra-

tion develops a ratio made up of unlike items, namely, machinery (expressed in dollar value) and men. It is perfectly permissible to use such a ratio, because the items listed bear some relation to each other. A meaningful comparison or relationship has been set up. We do not add "pears and apples" in arithmetic, but we do compare the average weight of pears with that of apples, or the cost per pound of the two fruits, with full propriety. We should express the resulting ratio precisely and accurately, so as to leave no doubt as to what it is we are comparing in each instance. (See Figs. 1–2, 2–2, and 2–3 for presentation of various types of statistical ratios in graphic form in chapters 1 and 2.)

d. Graphs. Statistical graphs represent statistical values and relationships in diagrammatic or pictorial form. Graphic presentations are more easily grasped and comprehended by the reader than are statistical tables. Graphs may be employed as a tool for analysis by statisticians, as well as serve as a convenient method for presenting results to the public.

A very useful type of graph is 1) the simple *bar graph*, in which the length of a horizontal or vertical bar represents a particular figure. Numerous examples of bar graphs are utilized in chapters 1–3. (See Figs. 1–2 to 3–3.) Other types of graphs used for the vivid psychological impressions they make on the viewer are 2) the *circle* or *"pie" graph*, which is frequently used to show the division of parts of a whole, 3) the *area graph*, in which the total of the square enclosed rather than the length of a rectangular bar is the basis for comparison, 4) the *symbol graph*, in which the relative number of equal-sized symbols indicates the relative quantities of each category being compared. Maps may be used as graphs to show density or quantity by use of various sizes or numbers of dots. Cross-hatching may also be used effectively on maps to show contrasting areas. See samples at bottom of page.

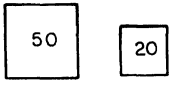
When bar graphs are used to represent time series, the flow of time is depicted along the horizontal (x) axis. The scale of the quantity being measured is depicted along the vertical (y) axis. (See Fig. 2–5.) A time series graph need not be a bar graph. Line graphs may be used to show the profile over time of the quantities being compared. (See Fig. 2–7.)

e. Measures of central tendency. If each item falling into each category of data classified by size on the vertical axis is represented by a tally mark (///), the tallies themselves will form the basis for a bar graph, as illustrated in Fig. 15–7.

This method of tallying items yields a frequency distribution, which consists of data classified into groups upon the basis of size. The number of tallies within each group indicates the *frequency* with which that group appears in the data. In the construction of frequency distributions for large masses of data, it is useful to employ groups or class intervals that reduce the



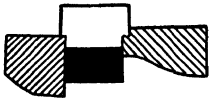
(2) The circle or "pie" graph.



(3) The area graph.



(4) The symbol graph.



Use of cross-hatching.



Maps showing density or quantity.

data to more manageable proportions. For instance, job-evaluation totals ranging in value from 400 to 1,000 might be analyzed and discussed more readily if the jobs are grouped into a dozen labor grades ranging from 400 to 449 as grade 1, 450 to 499 as grade 2, 500 to 549 as group 3, and so on, instead of being left in 601 separate point categories.

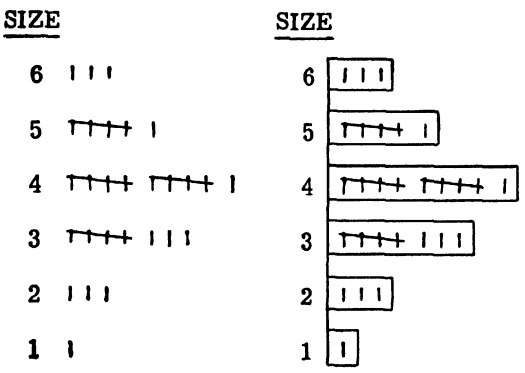


Figure 15–7.

This tendency to reduce unwieldy masses of raw data into a more limited number of groups or classes may be carried a long step forward by employment of the "average" as a single summary figure that represents an entire set of data. The average in statistics is a measure of central tendency. It should be noted that there are several types of averages, which are derived in very different manners. One type of average is an average obtained by calculation. The arithmetic average or mean is the standard illustration of this type, although a geometric mean may also be calculated. The second type of average is arrived at by position within an array. The median and the mode constitute well-known examples of this type.

The arithmetic mean is calculated simply by adding together all the numbers in a group and dividing the total by the number of items. For example, the arithmetic mean of the series 2, 4, 6, 8, 10 is 6. In this instance, the average is apparent by inspection. It could also be calculated by adding the 5 items, totalling 30, and dividing the sum by the number of items involved.

If the items in the example given above were 2, 4, 6, 8, and 100 instead of 10, the arithmetic average of the 5 items would be 24 instead of 6. As 24 is very much higher than 4 of the 5 items used, this arithmetic average, while accurate enough according to our definition, is not very representative of the items involved. The mean in this case is strongly affected by a single high value, 100.

For many purposes, it might be useful to know the value of the middle item in an array or in a frequency distribution. This middle value is called the median. It is an alternative type of average. The median value in the series, 2, 4, 6, 8, 10 is 6, the identical value that is arrived at in calculating the mean. The median value of the series 2, 4, 6, 8, 100 is still 6, however, whereas the mean in this case jumps to 24. If an even number of items were included in the array, the median is set at a point half way between the two center items. Thus the median for the series 2, 4, 6, 8, 10, 12 would be 7.

It may be noted that both the mean and the median value of 7 in the series immediately above happen to be a figure that does not occur in the series at all. In some instances, it is most helpful to accept for an average the figure that actually occurs most frequently in an array of items clustering around some focal point. This most prevalent item constitutes the average known as the mode. If a shoe manufacturer wished to select "Mr. American Sole," upon the very good ground that his feet and other key bodily measurements were of average size, and not heavily encased in muscle, he might screen candidates upon the basis of model shoe size, rather than use the mean or the median. The exact values of the mean and the median might turn out to be fictitious shoe sizes that never are stocked. Perhaps size 9.123456789 might prove to be the mean, carried to nine decimal places to meet laboratory accuracy standards. Size 9

and 7/97ths might prove to be the equally startling median size if weighted values are used. The national sample of men's feet tested might have yielded, near the center point, 80,000 size 8½ shoe feet, 115,000 size 9 shoe feet, 100,000 size 9½ shoe feet, and 60,000 size 10 shoe feet. The judges in this nation-wide contest might be well advised to declare that just plain ol' size 9 is the winner's size. They need not bring in weird decimals or fractions. They need not even mention the mean and the median at all if the judges' decision has been declared in advance to be final. Otherwise, disgruntled males might well challenge the "arbitrary" selection of the mode from among a half dozen available averages.

It would add considerably to the usefulness of the average selected if the statistician reporting would also inform the reader of the range of values of which this particular mean, mode, or median is declared to be the average. Other significant characteristics of the array of values may be set forth for reader information as well. We shall now consider some of these useful concepts.

f. Measures of dispersion and skewness. Two additional characteristics of the statistical data that group around the average are 1) the measure of dispersion or deviation of the distribution and 2) the measure of the shape of the pattern, *i.e.*, its asymmetry or skewness. In many instances the person reporting statistical data will state the average value and then go on to describe verbally dispersion and skewness characteristics. Other methods do exist, however, for measuring dispersion and skewness in numerical terms.

Measures of dispersion may either be position measures or calculated measures. Commonly used position measures include a) the range, *i.e.*, the difference between the highest and lowest value of the data, and b) the quartiles, *i.e.*, the partition values that divide the arrayed items into four equal groups. Commonly used calculated measures of dispersion include a) the average deviation, *i.e.*, the average deviation of all data from an established measure of central tendency, such as the mean or median, and b) the standard deviation, *i.e.*, the square root of the mean of the squared deviations. The standard-deviation measure of dispersion plays an important role in statistics. In a normal distribution, 68.27 per cent of all items are within one standard deviation of the averages, 95.45 per cent are within two standard deviations of the average, and 99.73 per cent are within three standard deviations of the average. Observed values which fall two or three standard deviations away from the norm are rarely so located as the result of chance alone. Such wide differences in values may be dubbed "significant."

As we noted earlier, if an array includes a few very high-valued items, the mean will exceed the median, and the resulting curve would be skewed to the right. If the array includes some very low-valued items, the mean will be lower than the median, and distribution would be skewed to the left. Exact figures may be arrived at mathematically to express the degree of skewness present in a set of data.

g. Index numbers. Index numbers constitute a widely used and highly useful form of statistical ratio. They reduce complex actual figures to simple relative figures. Moreover, index numbers enable the observer to compare changes occurring over time in terms of a base figure that is readily understood. Index numbers are used to express price data, quantity data, value data (price × quantity), and special purpose data (price, quantity, and value data combined in special patterns). For example, numerous labor contracts have wage adjustment clauses geared to changes in the cost of living, as computed by the Bureau of Labor Statistics of the Department of Labor. This is an aggregative index formed by adding together, with assigned weights, numerous items of data that figure in the cost of living for the average U.S. family.

h. Time-series analysis and application. The mere recording of time-series data in a graph or table does not tell a businessman what to expect in the future from month to month, year to year, or over a period of years. Time-series data are the resultant figures of the interaction of a number of forces. For analytical purposes, time-series forces may be broken down into the following components:

(a) Seasonal variations, *i.e.,* rhythmic fluctuations related to natural forces, such as the weather, or to man-made conventions, such as Christmas and Easter gift purchasing.

(b) Cyclical fluctuations, *i.e.,* rhythmic movements in which periods of prosperity and depression affecting business in general follow each other in varying patterns.

(c) Secular trend patterns, *i e.,* the tendency of data comprising a time series to increase or decrease over a long period of time. The growth of population in the United States and the rising standard of living that has characterized the American economy make for a rising secular trend in almost all basic areas of economic life. Nevertheless, when a new development, such as TV, begins to supersede an established product, such as radio, the trend line for the displaced industry undergoes a fundamental shift in a downward direction.

(d) A number of great outside events, *i.e.,* events that are nonrecurring or highly irregular in timing and frequency, exert a significant influence in the movement of time-series data. The world wars of the 20th century comprise a notable case in point in this respect.

By breaking time-series data down into seasonal, cyclical, trend, and nonrecurring components, the business statistician greatly improves his chances of forecasting future movements of time-series values. What occurred in the past has great interest for all of us. Past events have their greatest utility, however, when they are used, with due caution and sensitivity to changed conditions, to predict future events.

i. Correlation and variance. Correlation analysis plays an important role in the central statistical task of comparing numerical data. A measure of correlation may be used to indicate whether or not—and the extent to which—two variables appear to be associated with each other, either directly or inversely, as corresponding values of each are selected for analysis. If a doubling of variable "x" (*e.g.,* hours spent in study) were to cause a significant rise in variable "y" (*e.g.,* grade received in class quiz), then the two variables may be said to show a moderate positive correlation.

The mere fact of establishing correlation does not in itself imply, however, that a cause-and-effect relation exists between the variables. The improvement in grades noted in our illustration may have resulted from increased interest and alertness upon the part of the student as the term progressed, rather than from the mere mechanics of study. A spurious type of correlation may be found, for instance, between the wheat-crop yield in India and the price level of urban real estate in Boston. When no cause-and-effect relation can be discovered, and when the two variables are not even dependent upon a third underlying variable, or, indeed, have no connection with each other, there is no point in establishing a correlation just out of idle curiosity. The statistical tool of correlation can be very usefully employed if it is not forced to the breaking point.

Correlation may be investigated in simple fashion by use of a "scattergram" graph. Values of "x" and associated values of "y" may be plotted to scale on a 2-dimensional graph. If large values of x tend to pair up with large values of y, and if small values of each tend to correspond, the two variables will yield a positive correlation. (See Fig. 15–8.)

If, on the other hand, large values of x pair up with small values of y, a negative correlation pattern may be established. If a random scatter of dots results from the plotting, the correlation test will still have served its purpose by proving no correlation.

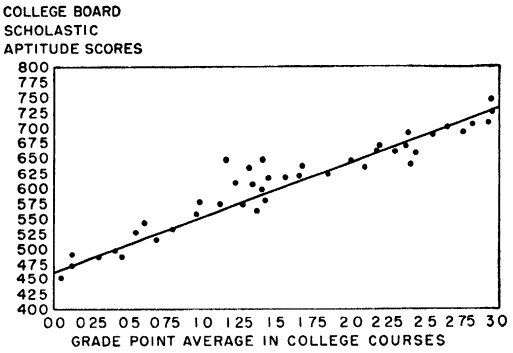


Figure 15–8.

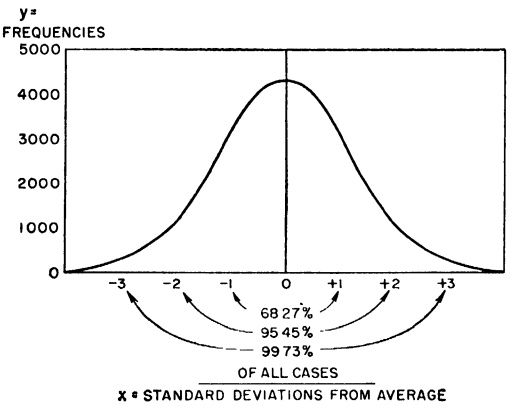


Figure 15–9.

The trend line of the relation between the two variables in a scattergram or correlation chart is called a regression line. It may be fitted by free-hand drawing if a crude measure will suffice. It may be fitted by use of the least-squares computation method if a more exact measure is desired. The direction of the regression line thus established tells whether the relation between the variables plotted is direct or inverse. The slope of the particular regression line established expresses the average relation between values of the two variables. The degree of reliability that may be ascribed to the regression line varies with the extent of dispersion of plotted points from this line. A common measure of this possible error of estimate, which may be set forth mathematically, is known as the coefficient of correlation.

j. Tests of reliability of samples. The degree of reliability that may be ascribed to various samples drawn from a large universe is an issue of prime importance in the science of statistics. We are familiar with the concepts of chance variability and of statistical regularity from our consideration of the coin-tossing experiment in section 2 on sampling. The distribution of averages of small samples of a large universe will form a normal, bell-shaped curve around the true average of all figures contained in the universe. The normal curve shapes up as in Fig. 15–9.

By applying this knowledge of the distribution of averages in a normal curve around the true average, the statistician can measure the range of probable error or deviation of an average found by taking a limited sample of the universe from the true average for the universe. The significance of remaining chance errors in the sample selected may be appraised by the statistician in light of the accuracy required for a particular study. If additional accuracy is requisite at any given point, the statistician can enlarge his sample by devoting additional time and energy to the task of data collection.

5. *INTERPRETING AND APPLYING RESULTS*

The interpretation and application of the results of statistical analysis cannot, as a general rule, be divorced effectively from the preceding steps in which statistical data are gathered and processed. An executive who understands statistical method may, of course, assign a statistical problem to a subordinate for investigation, retaining for himself the general task of defining statistical problems and interpreting the results of analysis. Even in these cases, the executive must be briefed on the step-by-step proceedings of the investigation, so that his interpretations and conclusions will not conflict with the data that form the subject matter of the study. An executive who does not himself understand basic statistical method

is very likely to misinterpret and misuse the results of statistical investigation. His best move would be to call for a finished report by a competent statistician who has a broad grasp of all aspects of the business situation in which the tool of statistics is to be employed.

6. PREPARATION OF A REPORT OF THE COMPLETED INVESTIGATION

The report of findings and recommendations by the statistician who conducted an investigation is the "pay-off." If the statistical results themselves are accurately stated and if logical conclusions and recommendations are clearly and concisely formulated, the user of the report will learn to place confidence in the judgment of the statistician who drew up the report. On the other hand, many a report containing workmanlike statistical tables and correctly derived statistical formulae has been cast aside without action because of shortcomings in English usage and exposition exhibited in the presentation of the data. This "halo" effect regarding confidence, or lack of it, spreads readily from the verbal to the computational phases of the statistical study. We may defer a detailed consideration of report-writing, however, until the subject again comes to our attention in the second half of chapter 16.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	292–294	What function does accounting perform in business administration?
2	292–294	President Klung of the Klung Rubber Company has made the following statement: "I hire bookkeepers to post my records and I hire accountants to supervise the bookkeepers. Accounting is a specialized profession. I have never studied the language of accounting and do not intend to do so. My function in this company is to set top policies, not to deal with accountants." Evaluate this statement.
3	295–296	What information is provided for management by a balance sheet? By a profit-and-loss statement?
4	296–298	What functions do journals and ledgers perform in accounting systems?
5	Case Section E	Answer questions 1–13 pertaining to the Western Street House Practice Set.
6	298–302	What function does statistics perform as a tool in business administration?
7	298–311	President Klung of the Klung Rubber Company has made the following statement: "Statisticians are so taken up with averages, ratios, and index numbers that they lose sight of the real problems which confront management. When I tackle a problem, I do not bother with statistics. I get right at the heart of the problem." Evaluate this statement.
8	302–304	A first major step in statistical investigation is said to be "a statement of the problem." Yet a great many items must be sifted and sorted before an adequate formulation of a complex problem can be achieved. In many instances a problem stated is a problem in good part solved. Can you reconcile these two concepts of the role of the problem statement in statistical investigations?
9	303–304 & 310	What advantages might be gained from the use of "sampling" techniques, and what principal safeguards must be taken to ensure the compilation of valid samples?

QUESTION NO.	PAGE REFERENCE	QUESTION
10	306–308	Outline specific situations of your own choosing in which a) the mean, b) the mode, and c) the median might individually prove most useful if selected to serve as an "average."
11	308	The Klung Rubber Company suffered the following losses under President Tom Klung, III's régime: 1945 – $23,000 1947 – $45,000 1949 – $67,000 1946 – $34,000 1948 – $56,000 1950 – $78,000 Using 1945 as the base figure (i.e., 1945=100), compute the index number for each year of operation.
12	309	How do seasonal, cyclical, and secular fluctuations in business differ from one another? Use the building trades industry for illustrative purposes.
13	309–310	If the existence of a high degree of correlation between two factors does not prove any causal dependence of one factor on the other, of what value might knowledge of this correlation be to a businessman?
14	121–126	What major types of statistics did G.E. consider in deciding a) whether or not to build a new electronics plant, and b) whether or not to locate this plant in Syracuse?



16 Management Communications and Controls: Budgets and Reports

BUDGETS

BUSINESS ADMINISTRATORS MUST, by the very nature of things, often take action upon the basis of incomplete and inconclusive evidence. This absence of ultimate certainty should not, however, be regarded by the businessman as a reason to abandon his quest for knowledge bearing upon specific situations. One of the surest paths to success in business is that which uses established channels of communication within an organization to draw together quickly and efficiently pertinent data from the best available sources of information. In a competitive race among the partially informed, the more informed will normally outstrip the less informed.

Business budgeting can play a key role in the process of formulating business policies, executing business plans, and controlling business operations. The need for developing a budget leads executives to study systematically the problems their enterprise may face during the coming period. All divisions of the management organization are brought into this planning process. Once the basic budgetary decisions have been reached by management, they serve as a declaration of policies for guidance of the entire organization. The budget directives adopted by a firm serve as an integrating factor that fosters coordination of effort during the actual execution of business plans.

The budget is also a valuable tool for use in controlling basic business operations. A business may, for instance, adhere rigidly to a course of action prescribed in its budget, or it may give heed to storm signals observed at budget-control points and place in effect a plan that knowingly departs from the predetermined course of action. In either event, the budget will have provided a useful yardstick for control purposes. Another aspect of the follow-up or control phase of a budget program is its effectiveness in revealing weaknesses within the organization, which are in need of remedial action. The budget, then, constitutes a coordinated program of operations to be

Illustration at top of page: The large National Cash Register used during the N.Y. and S.F. World's Fairs in 1939 to record daily attendance symbolizes the importance of budgets and reports in business operations. (*The National Cash Register Company*)

carried out by the entire organization in all phases of its business activity.

The role that budgetary control may play in guiding a business enterprise successfully through a course strewn with financial pitfalls is illustrated in simplified fashion in the following case situation:

TRANS-WORLD TELEVISION COMPANY

During the fall of 1947, Mr. Nicholas Roskin, an electronics engineer with 20 years' experience in the employ of such firms as R.C.A., Philco, and G.E., decided to take advantage of his knowledge of the rapidly growing TV field by going into business for himself. Roskin organized the Trans-World Television Company as an individual proprietorship to engage in TV receiver-set assembly and distribution in Syracuse, New York. His place of business was thus within a half-dozen miles of G.E.'s vast Electronics Park TV plant. Syracuse was one of a score of American cities that had TV-transmission facilities at that time.

Roskin was confident that he could undersell established TV manufacturers of national reputation by at least one hundred dollars a set on large-screen models for the next several years. He planned to purchase component parts from large manufacturers and assemble them under license in accordance with his own TV-receiver circuit system. He would then sell the sets within the Syracuse region under the Trans-World brand name. Roskin also undertook to provide service for the sets he installed.

He was confident that he could keep ahead of the TV market by taking early advantage of such new developments as might be brought forth by the large companies. The large companies followed the practice of licensing smaller companies, such as his own, and he felt sure that this practice would continue. He also had some original ideas which he was anxious to try out in practice. Roskin believed that he could make a good salary for himself as a self-employed engineer and that he could reap a handsome profit on assembly and distribution of superior sets, as well. He proposed to keep his company's costs down by concentrating upon a home-market region. He also felt that he could pocket the money that other companies were allocating in large amounts for advertising on a long-range basis. Roskin planned very frankly to make his money in the short run, while other competitors were focusing upon the development of TV for the long run.

Syracuse was regarded by Roskin as an unusually good TV area for early exploitation. It had one station in operation, as of late 1947, and a second station was then under construction. Trained TV technicians were available in the community because of its proximity to the G.E. plant. Roskin hoped to build up a sizeable crew of technicians at low cost by hiring World War II veterans upon an on-the-job training basis. In this way, the government would pay a goodly portion of each TV-trainee's wages for a period of many months.

Roskin had devised a built-in antenna on an experimental set, which, he believed, would make home demonstrations feasible in most locations without any permanent installation. As station WHEN, Channel 8, was on the air just from 5 P.M. to 10 P.M. at that time, home demonstrations were feasible only on a part-time selling basis. Roskin believed that trained salesmen would also be available on a part-time basis if he offered work on a commission basis to business-administration students at Syracuse University. After sales were made, Roskin or one of his company technicians could make a permanent installation the next afternoon, adjusting the antenna to receive WHEN's test pattern clearly, even though a live show were not on at the time.

After consulting a marketing professor at the local university, Roskin decided to use telephone calls to arrange demonstrations for householders in high-rental areas, which also were good signal reception areas. As soon as a preliminary contact was thus made by phone, leaflets describing the ad-

vantages of Trans-World Television were mailed out so that the prospect, his family, and his neighbors, if possible, would be properly prepared to enjoy the demonstration. Roskin planned to supplement this modified house-to-house method of urban distribution by having feed-and-farm-supply salesmen carry sets from farm to farm for rural distribution in the Syracuse reception area, although the professor had expressed doubts as to the wisdom of this particular plan.

Roskin's longer-run plans included branch operations in the Rochester and in the Utica reception areas. He also had in mind a plan for mass distribution of Trans-World assembled sets on a private brand basis through one of New York City's leading department stores.

Roskin rented assembly shop and office space in one wing of a building that had formerly been a warehouse for a U.S. Army unit stationed in Syracuse. He invested a goodly portion of his own life's savings in the purchase of equipment, small tools, materials, and supplies with which to launch shop activities. A local bank agreed to help Roskin in his financial problems, to the extent of arranging credit terms for purchasers of Trans-World TV sets without tying up company funds for extended periods of time. John Grover, an employee of the bank, whom Roskin had met socially several months before, was extremely helpful in arranging for this service.

Grover was equally helpful a few months later when a series of financial misfortunes beset Roskin. The business was not as profitable as Roskin had hoped. He was not able to maintain the sales volume that he had hoped for, once the Christmas-rush season had passed. Moreover, he was not able to keep costs within income, try as he might. Roskin soon found that he was not able to draw his own normal engineering salary. He attempted to trim his personal needs by trading his one-family home for a two-family home, plus a cash settlement. He gave up his company's original assembly shop and office space in the building that had several wings for future expansion. At considerable cost in time and inconvenience, he moved his shop to a location in an old building in the downtown section where the narrow front office could also serve as a retail display area. These retrenchment moves slowed down his cash-loss rate, but did not turn the tide. When the furnace suddenly went bad in the two-family house and he had to arrange for a relatively expensive FHA loan in order to replace the unit, Roskin reached the snapping point in his new business career. He confided to his friend at the bank that he was ready to re-apply at G.E. for an engineering post.

Roskin's friend, Grover, had become very much interested in the fortunes of Trans-World Television through his conversations with Roskin. He had earlier purchased one of Roskin's 16-inch receiver sets and found that it performed very satisfactorily. Roskin, in characteristic fashion, had insisted that Grover pay only a wholesale price for this set, which, at $399 installed, already retailed at $100 to $150 less than comparable name-brand sets. Grover was impressed by the fact that Roskin was turning out a single line of 16-inch table models at a price below that which certain other firms were still asking for 12-inch table models. Grover was convinced that what Roskin, a trained engineer, needed most in his business was the collaboration of a competent man with comparable training in problems of business administration. Grover informed Roskin that he personally would undertake to interest such a man in Trans-World if Roskin would agree to the installation of needed business procedures and business controls, along with the infusion of needed new capital. At this stage, Roskin was more than willing.

Lee Jackson, a business-administration college graduate who had recently completed a successful career as a professional athlete, had returned to Syracuse during the spring of 1948. He was now looking for an opportunity to invest some of his funds in a small or medium business that held

forth the promise of a return and that would allow him personally to engage in managerial activities. Grover, who had known Jackson well during their college days, had been, at that time, very much impressed with his abilities. Grover called on Jackson and described the Trans-World proposition to him. Within a week's time Jackson had sized up the Trans-World situation to his own satisfaction and arrived at the point of closing a deal with Roskin.

The Trans-World Television Corporation was incorporated on July 1, 1948, by all three men. Grover finally agreed to participate in policy formulation and in finance and credit aspects of the business, at the insistence of Jackson and Roskin. Jackson planned to handle general managerial functions, placing particular emphasis upon sales, advertising, purchasing, scheduling, accounting, and budgetary control. Instead of carrying the full weight of the business upon his own shoulders, Roskin now concentrated upon supervision of manufacturing activities and service activities, technical aspects of relations with suppliers, and product development. From this point on, we shall focus our attention particularly upon the use made by Messrs. Jackson and Grover of the administrative tool of budgetary control.

Immediately upon joining the company on July 1, Jackson set up an accounting system that permitted detailed records to be kept of all costs of doing business and of all revenues received. Roskin's earlier efforts in this direction had fallen far short of the mark. At the end of a month's time, Jackson was able to construct the statement in Fig. 16–2.

Jackson and Grover went over this statement in detail with Roskin, with the objective of learning about areas in which tighter control could be achieved. They also wished to develop a break-even chart for the enterprise as soon as they could develop sufficient comprehension of the basic facts.

Figure 16–2

TRANS-WORLD TELEVISION CORPORATION
INCOME STATEMENT FOR JULY, 1948

Item			*Amount*
Receiver sets sold (units)			14
Sales @ $399			$5,586
Cost of product:			
Materials and parts	$2,234		
Direct labor	1,650		
Plant overhead	480		
Total		$4,364	
Selling expenses (com. 8%)		448	
General & administrative expenses *		1,624	
Total cost and expenses			6,436
Net profit (loss)			($850)

* Includes salary items of $400 for Roskin, $300 for Jackson, and $100 for Grover, the last named of whom devoted just a portion of his time to the firm.

By the end of September, the two new men felt that they had enough data and enough of a feel for operations to draw up a tentative break-even chart based upon a quarterly income statement, which did not differ significantly in proportions from that shown above for the month of July. The break-even chart represented an effort to capture graphically the vital relationship between volume and profit under different assumed conditions. This relationship breaks down, in turn, to subrelationships involving fixed costs, variable costs, and income. Fixed costs are those that will remain approximately the same up to maximum shop capacity, without relation to volume of output. Variable costs are those that will change in more or less direct ratio to changes in volume. It is assumed that income will remain so much per unit sold without change in price. The break-even chart (Fig. 16–3) represented the volume-

profit relationship confronting Trans-World as of July–September 1948.

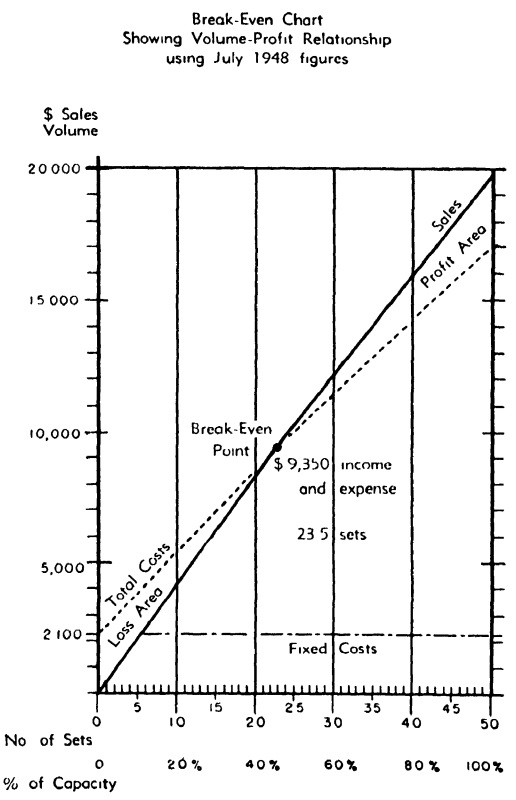


Figure 16-3.

This chart brought out the following basic points:

1. Fixed costs are in the neighborhood of $2,100 a month.
2. Variable costs are in the neighborhood of $310 a set.
3. Income from sales amounts to $399 a set.
4. The shop is capable of producing approximately 50 sets a month.
5. Production and sale of approximately 23.5 sets must be achieved each month if the firm is to break even.
6. Income and costs at the break-even point balance at approximately $9,350.
7. The maximum possible net profit (before taxes) under existing conditions is approximately $2,400 a month, or $28,800 a year.

In determining the exact break-even point, Lee Jackson used the following formula: [1]

$$x = \frac{f}{1 - \frac{v}{s}}$$

in which f represents fixed costs, v represents existing variable costs, s represents existing sales volume, and x represents the unknown sales volume which is necessary to break even.

All three men were struck by the high proportion of variable costs encountered in their particular situation. It was not actually surprising, however, when they stopped to think that they did not have any great investment in fixed plant and equipment. They simply assembled TV parts, which were purchased in finished form from large manufacturing concerns. They also sold on a straight commission basis. What little fixed expense they did have consisted of plant overhead (approximately $480), and general and administrative expenses (approximately $1,624, of which nearly half represented the salaries of the three principals).

The narrowness of the spread between their present selling price of $399 and the stated variable costs of approximately $309 or $310 led the three men to inspect closely the component elements here too. They seemed to have sales-commission costs under control at the current sales price. Roskin had happened to set as the commission costs $32, which was approximately 8 per cent of sales price, in hiring college student salesmen. Jackson made a mental note to stress the 8 per cent rather than the dollar figure in his dealings with the sales crews, particularly if volume rose and prices fell as anticipated during the next several months and years.

Materials and parts comprised just over

[1] Josiah Brooks Heckert, *Business Budgeting and Control,* page 39. New York: The Ronald Press Company, 1946.

50 per cent of total variable costs. They were under Jackson's jurisdiction, insofar as formal relations with suppliers were concerned. The actual specifications as to what materials and parts were to be purchased were necessarily under Roskin's jurisdiction, however, for he alone knew what was technically desirable or, indeed, essential. Control of costs in this area was of vital importance to the company, for the figures bulked so large in the total cost of the completed set. At any given time, however, materials' and parts' costs varied directly with volume of output.

Direct labor costs comprised just over 38 per cent of total variable costs. They came under Roskin's jurisdiction, for he had charge of the men working in the shop. In actual practice in this particular firm, wages were semi-variable, rather than fully variable, costs within the normal activity range. Unless the firm could offer its men reasonable take-home pay, they would soon shift jobs within the community so as to find some employer who could meet their needs. The wages of the veteran trainees were also somewhat independent of volume of output. Jackson felt that there existed a real possibility of increasing individual worker productivity significantly, as soon as the shop moved into higher-level output. Improvements in method, as well as improvements in morale, were important factors here.

Before placing each component figure under an "electronic microscope" for detailed study, Jackson decided to push his two colleagues into some crystal-ball gazing as to the normal production volume that the sales force could market and the shop could turn out. Their new-found knowledge of the break-even point served as a stimulant in this respect. Roskin estimated that unavoidable delays, even under Jackson's new procedures for purchasing materials and scheduling work, would cut his work force's actual production down to 85 per cent of the normal plant capacity figure of 50 sets a month. Jackson replied that he would hire and train additional salesmen to whatever extent was needed in order to dispose of the company's output. He felt that 90 per cent of capacity would be an attainable figure in future months, particularly as method changes and improved skill gradually stepped up the effectiveness of the current work force. Jackson accepted Roskin's 85 per cent figure as an average figure for the coming year, however, for it was triple the level of output he had achieved in the recent past.

At this point, Grover brought both of his colleagues back down to earth by insisting that they not plan upon a normal production volume of more than 70 per cent of capacity at current prices for the calendar year 1949. He believed that, if they exceeded this volume for a sustained period in the current shop, however, financial backing could be obtained to set the company up in a large plant capable of turning out 150 sets a week. Grover, therefore, regarded the current operation as a trial run of tremendous importance for the future of Trans-World.

Having agreed upon 35 sets a month as a normal volume for 1949 under existing conditions, the three managers developed a table showing cost per set for the normal volume of 35 and for volumes of 20, 25, 30, and 40, 45, 50 on either side of the norm. They wished to have exact cost per set figures for target use, under conditions in which volume was regarded as the only variable. This tabulation shaped up as seen in Fig. 16–4.

The normal cost per set that the men adopted for 1949 under the normal volume assumption of 35 sets referred to was $370.11.

Actual production for January 1949 turned out to be 25 sets. Although the firm's outlook was very much better at that time than in July 1948, when only 14 sets were marketed, the three managers found at the month's end that total costs still exceeded total income, as indicated in the income statement in Fig. 16–5.

Figure 16–4

TRANS-WORLD TELEVISION CORPORATION ESTIMATED COST OF SETS, 1949

Number of sets per month	20	25	30	35	40	45	50
Cost of product (in plant)							
Materials and parts	$3,200	$4,000	4,800	5,600	6,400	7,200	8,000
Direct labor	$2,360	2,950	3,540	4,130	4,720	5,310	5,900
Plant overhead	$ 480	480	480	480	480	480	480
Cost of product (in plant)	$6,040	7,430	8,820	10,210	11,600	12,990	14,380
Selling expenses	$ 640	800	960	1,120	1,280	1,440	1,600
Gen'l & admin. expenses	$1,624	1,624	1,624	1,624	1,624	1,624	1,624
Total cost	$8,304	9,854	11,404	12,954	14,504	16,054	17,604
Unit cost in plant	$302.00	297.20	294.00	291.71	290.00	288.67	287.60
Total cost per set	$415.20	394.16	380.13	370.11	362.80	356.76	352.08

Figure 16–5

TRANS-WORLD TELEVISION CORPORATION
INCOME STATEMENT FOR JANUARY, 1949

Item	*Amount*	
Receiver sets sold (units)		25
Sales		9,700
Cost of product.		
Materials and parts	4,300	
Direct labor	3,100	
Plant overhead	525	
Total	7,925	
Selling expenses	800	
General & administrative expenses	1,639	
Total cost and expenses		10,364
Net profit (loss)		(664)

Because the volume variance between 35 sets and 25 sets accounted for only part of the cost variance and indicated that the company should still have experienced a profit instead of a loss, Jackson set about analyzing the figures in more detail to find the reasons underlying the continuing difficulty. His expectation had been that 25 sets selling at $399 each would have cost the firm $394.16 to produce and market. The difference between the $394.16 figure and the normal cost of $370.11, which had been projected the previous fall, was the expected volume variance. Actual costs of $10,364 divided by 25 sets gave an average actual cost of $414.56 per set. A variance of $20.40 ($414.56-$394.16) per set remained to be accounted for on the cost side above and beyond the volume variance. The sale of 25 sets had brought in just $9,700 of income instead of an expected $9,975. This variance of $275 in total, or of $11 per set, remained to be accounted for on the income side. The expanded income statement that Jackson set up as part of the process of explaining variances from budgeted figures is reproduced in Fig. 16–6.

The $275 that Jackson labeled "discounts and allowances" represented reductions in price of $100 each, which Roskin had allowed to two personal friends who had purchased sets during January, plus a refund of $75 that Jackson himself had granted a customer whose set was damaged during the process of delivery and installation. The $300 variance in materials and parts costs was made up of a $250 item for defective parts for which the supplier could not be held accountable, plus a $50 item for missing parts. The $150 variance in labor costs represented overtime paid during the last week in January in order to

Figure 16–6

TRANS-WORLD TELEVISION CORPORATION
INCOME STATEMENT FOR JANUARY, 1949

Item	*Amount*	
Receiver sets sold (units)		25
Gross sales (@ $399)	9,975	
Less discounts and allowances	275	
Net sales		9,700
Cost of product:		
Normal cost of product	7,430	
Variances from normal:		
Materials & parts variance	300	
Direct labor variance	150	
Plant overhead variance	45	
Total cost of product	7,925	
Selling expenses	800	
General and administrative expenses.		
Normal gen'l & admin. expenses	1,624	
Variance from normal	15	
Total general & admin. expenses	1,639	
Total cost and expenses		10,364
Net profit (loss)		(664)

meet delivery promises after 1) production was retarded by a shortage of parts and 2) several defective sets were partially torn down and rebuilt. The $45 plant overhead variance represented an increase in rent of that amount recently announced by the landlord for each month of 1949 to offset his own increased taxes and other expenses. The $15 variance in general and administrative expenses allocated to January represented half of a $30-a-month raise, effective January 15, which was necessary in order to keep the firm's office stenographer from leaving to accept other offers. In this manner, a budgeted profit of $121 at the 25 set-per-month activity level was converted into an actual loss of $664.

The seriousness of this unexpected loss led Jackson to take the following steps:

1. For planning purposes, he broke the 35-set monthly average figure for 1949 down into specific monthly target figures as listed in Fig. 16–7.

Figure 16–7

January	25	July	25
February	25	August	30
March	30	September	35
April	35	October	45
May	40	November	45
June	35	December	50

In this manner he hoped to achieve closer control of purchasing needs and of cash needs.

2. For direction purposes, he went over each item in the February budget in detail with Roskin and Grover, with a request that the budgeted profit figure be regarded as the minimum goal.

3. For control purposes, he went back over each variance in the January budget to point out weaknesses in management and to raise problems for discussion. It was apparent that most of the variance for January arose in areas under Roskin's supervision. Nicholas resolved to tackle his task with renewed vigor in coming months.

At the end of March, Jackson drew up Trans-World's monthly statement in a somewhat different form (see Fig. 16–8).

These figures were of course a source of much satisfaction for the three executives of Trans-World. Not only was actual output up 50 per cent over the forecast for March, but the actual net profit at this high level of activity was even greater than the budgeted net profit for this level. In many respects, the fact that *actual* profit for 45 sets was 4.8 per cent higher than *budgeted* profit for 45 sets was more pleasing to Jackson and Grover than the fact that actual profit for 45 sets was 300 per cent higher than the profit forecast for an activity level of 30 sets. Variances from budget were not a source of worry this month. The $25 sales refund granted to one customer was of negligible importance, amounting to just 14 100ths of 1 per cent of sales. The materials and parts variance of $75 for defective

Figure 16–8

TRANS-WORLD TELEVISION CORPORATION
INCOME STATEMENT FOR MARCH, 1949

Item	*Profit Forecast* (Fig. 16–7)		*Actual*		*Budget* (Fig. 16–4)		*Over (under) Budget*	
Receiver sets sold (units)		30		45		45		
Net sales		$11,970.00		$17,930.00		$17,955.00		(25.00)
Cost of product:								
Normal cost of product (@ $291.71)	$8,751.30		$13,126.95		$13,126.95			
Variances from normal cost:								
Volume variance—plant	68.70		(136.80)		(136.80)			
Materials and parts variance			75.00				75.00	
Direct labor variance			(235.00)				(235.00)	
Plant overhead variance	45.00		45.00				45.00	
Total cost of product		8,865.00		12,875.15		12,990.15		(115.00)
Selling expenses (@ $32.00)		960.00		1,440.00		1,440.00		
General & administrative expenses:								
Normal general and administrative expenses (@ $46.40)	1,392.00		2,088.00		2,088.00			
Variance from normal expenses								
Volume variance	232.00		(464.00)		(464.00)			
Labor variance	30.00		30.00		30.00			
Total general & administrative expenses		1,654.00		1,654.00		1,654.00		
Total cost & expenses		11,479.00		15,969.15		16,084.15		(115.00)
Net profit (loss)		491.00		1,960.85		1,870.85		90.00

parts in excess of allowed breakage and loss represented just 1 per cent of total materials and parts costs. (See 45-set column in Figure 16–4).

The direct labor variance, on the other hand, represented a saving of 4½ per cent on labor cost attributable to increased productivity upon the part of the work force under Roskin's supervision. The favorable volume variances of $136.80 and $464.00, totaling $600.80, were also very pleasing at this early period in the year, particularly in light of the fact that unfavorable variances totaling $300.70 at volume 30 had been anticipated. |Normal cost of $356.76 a set at volume 45 (in Fig. 16–4) is $13.35 less per set than normal cost of $370.11 at normal volume 35, which was assumed for the year. $13.35 times 45 rounds off at a $600 saving figure attributable to increased volume. Figured another way, fixed costs of approximately $60 a set at volume 35 were overabsorbed by $60 x 10 sets at volume 45. Hence the $600 figure.| Trans-World appeared to have reached a turning point in what had been, until recently, a struggle for survival.

EXPANSION OF TRANS-WORLD TV

In September, 1950, the Trans-World Television Corporation moved its main operations back to the large plant that Roskin had been forced to vacate two years earlier. A major financial arrangement was negotiated at this time with a group of Syracuse businessmen who expressed a willingness to invest in the expanding company. The firm's downtown facilities were also retained for use as a combination TV service-repair shop and retail sales outlet. A sales volume of 100 sets a week became physically possible under the new company set-up.

In light of this tremendous step-up in capacity, the three executives anticipated that a modified line layout for TV assembly would become feasible. Several subassembly departments were created on a pilot basis to determine whether or not the firm could now profitably manufacture a greater portion of its final assembly product. Several additional types of receiver sets were added to the original 16-inch table model produced by the firm.

Auxiliary items, such as TV tables, antennae, and lamps, were added to the retail outlet's line. A program of local newspaper advertising was inaugurated to augment both the retail outlet and the door-to-door sales campaigns. Direct sales on a volume basis to a New York City department store were tentatively negotiated for delivery in the middle of 1951. Plans were laid for early expansion to the Utica and Rochester areas as well.

Budgetary control played an increasingly prominent role in Trans-World affairs under General Manager Jackson's administration. Production Vice President Roskin was among the most enthusiastic advocates of this type of control, particularly as unsettled world conditions began to complicate the company's problems in the waning months of 1950. Among the major problem situations in which Jackson applied the techniques of budgetary control were the following:

1. The planning, direction, and control of departmental activities. Instead of starting with a single budget for the firm as a whole, the general manager built up his company-wide budget by piecing together departmental budgets, which departmental supervisors had played a major role in formulating.
2. The planning, direction, and control of activities relating to assorted products and models. Instead of concentrating upon a single type of item, the firm now needed to apply control techniques to its increasingly varied "mix" of television models and auxiliary products.
3. The planning, direction, and control of sales activities. As sales activities grew increasingly complex and shifted away from a straight commission-payment basis, a special technique was developed to tighten control over selling and distribution expenses. The budgeting of sales volume also became a matter of increased importance to the entire firm.

4. The planning, direction, and control of production activities. Budgetary techniques were devised to aid in achieving production-cost control, material and inventory control, labor-cost control, manufacturing-expense control, and plant and equipment investment control under the expanded manufacturing program undertaken by the firm.

5. The planning, direction, and control of financial activities. Budgetary techniques were also devised to control the financial program of the firm, including 1) inventory investment policy, 2) credits and collections policy, 3) cash needs, 4) capital-equipment investment policy, and 5) dividend policy.

Although budgetary control is just one of many administrative tools that may be usefully employed when placed in capable hands, it may be seen that this device played a central role in unfolding the Trans-World success story.

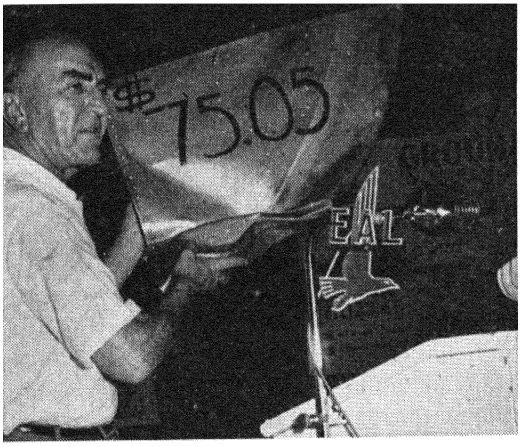


Figure 16-9: President Eddie Rickenbacker reports on results of efficiency drive within Eastern Airlines organization. (*By Life Photographer Ralph Morse [c] TIME, Inc.*)

REPORTS

We have seen some of the ways in which budgets may be used in planning, coordinating, and controlling business activities. Business reports also play an important role in the process of planning, coordinating, and controlling a well-run business. Whereas the budget is primarily a numerical device for expressing quantitative relationships, a business report may feature both numerical and written data and may deal readily with qualitative, as well as quantitative, relationships. Many leading business administrators who climbed the ladder of success at an early age with surprising ease attribute their first "break" and a goodly portion of their subsequent success itself to their training in the writing of effective business reports. By the same token, countless other businessmen struggling along within the ranks are severely handicapped by their inability to express themselves effectively, either verbally or in writing. The material on business reports contained in this chapter and in chapter 18 is in many respects the most important material contained in this text. It is difficult to over-emphasize the fundamental importance of business reports in the art of business administration.

GATHERING THE DATA

A businessman does not typically find the basic problems affecting his business lined up in front of him awaiting action. A good part of the problem itself, in many instances, is to determine through investigation just what may be the nature of the problems that are being faced at a given time. Even after the businessman picks out these significant problems for appropriate study, he may still encounter considerable difficulty in drawing together the critical data that bear upon his specific problems. If all of the factors that have an appreciable bearing upon a given situation could be ferreted out, the businessman still would not normally be able to devote sufficient time and resources to accomplish this exhaustive task.

In many problem situations, the need for early action would force the businessman to act upon the basis of partial returns. The pace of events is such in modern life that a feasible course of action, consistently executed, will win by default over long-continued inaction pending the receipt of more

complete returns. The possible increment value of fuller information versus the sacrifice of opportunity for early action is a choice confronting the businessman at every step in his program.

In order to approach a business-problem situation, the administrator must cut beneath surface symptoms of trouble into underlying causes of the difficulty that has arisen. Moreover, in sharpening his analysis, he should endeavor to organize specific problems involved in the situation around a more fundamental central problem, which may then become the focal point for his attack.

Once the central problem is clearly set forth and defined, it can again be broken down into its component factors for detailed analysis leading to a program of action. These component problems may be attacked effectively through use of a series of discerning questions relating to specific issues. Pro-and-con aspects of the situation may be marshalled as evidence contributing to a logical answer to each question. The weight of the evidence will build up to a decision on the central problem. This decision need not be of the unqualified "either-or" variety, unless the situation actually warrants such a simple course of action. If "shades of grey" do remain in the situation after thorough analysis, the recommended formula for current action may include provision for protection against possible but improbable contingencies.

The relationship among symptom, cause, and problem is illustrated in simplified fashion in the following case situation:

Symptom: In January 1951, the personnel-relations manager of the Syracuse branch bakery of an eastern bakery chain paid newly-hired skilled workers in the oven room at a rate higher than that allowed in the wage scale set by the central company organization for its northeastern region plants.

Cause: The personnel-relations manager of this branch bakery could not hire competent help at the old maximum rate, for rival bakers in the community now paid substantially more. Upon hearing of the problem, which had arisen quite abruptly, the Syracuse branch manager ordered the branch personnel-relations manager to pay a higher rate.

Problem:

1. Narrow view: should the pay of these employees be reduced or should the company maximum be raised?
2. Intermediate view: should labor rates be set for specific localities within a region so as not to restrict the ability of individual plants to compete in the local labor market?
3. Broad view: what is the basic relationship of the personnel-relations manager in a branch plant to a) the plant manager and to b) the central personnel-relations manager, and what procedures should be set up to keep such situations as the above from arising on a conflict basis?

It may readily be observed how different would be the content of a business report by a staff assistant to the general manager of the company, depending upon whether he envisioned the central problem involved in this instance as being problem 1, 2, or 3 listed above. It is not possible to produce an adequate report on a situation without first working out one's own understanding of the central problem at issue.

An analyst should be alert to the external, as well as to the internal, ramifications of each factor in a case. He, of course, must keep in mind possible interrelationships among the various departments of a firm, such as production, purchasing, sales, personnel, finance, and accounting. He should also stop to inquire about the implications of company action for company relations with outside groups, including stockholders, customers, suppliers, competitors, the community, and the government. Moreover, the effects of company action upon rank-and-file employees and upon management members themselves typically raise human problems that merit careful study for maintenance of a close-knit, smooth-working organization. A methodical, checklist approach at the scratch-paper stage with ref-

WRITING THE REPORT [2]

It should be remembered that the gathering of symptoms, causes, problem statements, data, and other evidence merely represents a "scratch-paper" process, preliminary to the formulation of the actual report itself. In report writing, as in problem analysis, method and procedure almost invariably team up to control "one-shot" brilliance. Rapid thinking and productive action are to be commended. Shortcuts which eliminate logical reasoning in the development of a position, however, are to be avoided like the plague in business situations. In the writing of the report the writer should adhere to such methods and procedures as experience shows bring best results to him in particular types of situations.

As a point of departure, the following suggestions are offered for the writing of business reports:

1. After preparing both a topical outline and a detailed content outline of your proposed report, let your ideas flow forth rapidly in a draft report pitched on a frankly scratch-paper level of phrasing and sentence structure. Try to capture sound ideas in a logical sequence that will carry your reader right along with you from beginning to end. Develop your paper *on paper* and do not leave significant interconnecting ideas dangling in the air. Do not leave your reader in doubt as to the completeness of your reasoning or as to the completeness of your grasp of the essential factors involved in the case.

2. By the same token, develop a complete report that lets the reader know that you have considered carefully the major alternatives to the course of action you have decided to recommend. Key considerations that have led you to select one alternative in preference to others should also be included in your report. This material would merit inclusion for its informational value alone. It also serves a second important purpose. It demonstrates to the reader the mature and balanced nature of your reasoning procedures. This demonstration should encourage reader confidence in your judgment and win acceptance for the major course of action you recommend.

3. Once you have poured forth your ideas in a draft report, you are ready to digest and integrate the material you have developed. Pride of authorship should encourage one to *revise* an original draft, not to stand pat with it. First approximations help to pinpoint the target, but seldom result in direct hits themselves. A report that is carefully constructed, from the point of view of organization and effective English usage, will encourage the reader to accept the writer's ideas without diverting his attention by reason of flaws in presentation.

4. Length is not an objective in itself. In fact, effectiveness is greatly enhanced if the report gives an impression of conciseness. Length will, of course, vary with the scope of the subject matter being covered and the purpose of the report. It should also vary in keeping with the informational background and style tastes of the person to whom the report is addressed. A reader who is himself familiar with the situation, who has confidence in the reasoning power of the analyst, and who wishes to use the report for decision making, rather than for detailed administration of a program, may call for a 1- or 2-page report. In other situations, a 5- or 10-page report would be more appropriate to accomplish the assignment in question.

5. The first critic of a finished-draft report should be the writer himself. He should adopt as skeptical an attitude toward his own assertions as his worst critic could possibly muster. One should frankly face up to the following question. Have I, in the process of writing the report, now convinced myself that a conclusion other than the one that I started out to develop would more nearly fill the bill? Do not let time invested in expounding one particular position blind you to the fact that developing a report is in itself an educating process. Take advantage of last-minute developments before you sign your name publicly to the finished document.

REPORT WRITING IN PRACTICE

The remaining pages of this chapter are devoted to an exposition of the key role

[2] This subject is covered in detail in Carl G. Gaum, Harold F. Graves, and Lyne S. S. Hoffman, *Report Writing*, 3rd ed. New York: Prentice-Hall, Inc., 1950.

that might well be played by business reports, not only in the operation of an effective business organization, but also in the development of a promising business career.

Brighton Young, a partially disabled veteran of World War II who had subsequently completed five years of university study in business administration between war emergencies, accepted a position with the Medium Small Tool Company of Jamesville, New York, upon receiving his M.B.A. in January 1951. Brighton's initial title was Trainee Assistant to the General Manager, a title that did little if anything to soften his student status within the company.

Mr. William F. James, the general manager of Medium Small Tool, had been attracted by Brighton's outstanding scholastic and activity record when he had described his own need for an all-around business-administration trainee to the placement director of a nearby business college. Brighton himself had clinched a job offer through the general alertness he displayed during a subsequent interview with Mr. James. It was the general manager's intention to train the boy for 4-week periods within each of the following departments of the tool company: production, purchasing, accounting, sales, and personnel. When Brighton was thus generally cognizant of the functions of the principal departments of the firm, Mr. James planned to re-assign him to several of these departments for second round tours of duty of considerably longer duration. After a couple of years of such seasoning, it was likely that the boy would be in a position to take advantage of a suitable opening as head of one of the firm's departments.

The Medium Small Tool Company manufactured a line of hand tools for distribution through hardware stores in the northeastern section of the United States. Although the firm had a creditable reputation in the trade, its volume of business had not been large in any year since its establishment in 1946. The sharp upturn in orders received during the late summer of 1950 and the increasing possibility of supplementing regular sales by special government defense contracts led James to inaugurate an accelerated program for expansion of the firm's physical facilities. A major wing was added to the company's plant during the winter of 1950–51. Plant and equipment capable of turning out double the firm's existing capacity were to be in full operation by late summer of 1951 under this program.

The company turned out its own forgings and its own wooden handles for a line of hammers and axes. It fabricated its own chisels, screw drivers, pliers, and wrenches as well. A somewhat unrelated item, which the company manufactured in considerable volume, was a patented metal pot-holder for use in lifting cooking utensils from the stove. The parts for this gadget were also fabricated and assembled in the Jamesville plant. The company line consisted of the following varieties of each type of item:

Items	*Varieties*
Hammers	18
Axes	12
Chisels	36
Screw drivers	18
Pliers	24
Wrenches	36
Pot-holders	3
Total: 7 items	147 varieties

The number of parts needed to form each item varied from two major and one minor, in such items as hammers and axes, to five major and two minor parts in various types of wrenches. Approximately 400 different parts were utilized by the company in its assembly operations, because, in certain instances, some parts were specified for two or more different varieties of an item.

Until the fall of 1950, the company's work force consisted of approximately 50 line workers, 15 of whom were in the forge shop, 10 of whom were in the wood shop, and 25 of whom were in the finishing and assembly room. The men were highly versatile and worked as a "task force," first on one job and then on another in rapid succession. Approximately 2,500 small tools of

assorted varieties were turned out by the plant each working day during the closing years of the 1940's. A slight upward trend was discernible in over-all sales volume each year during this period.

The workers in the plant were paid relatively high wages for the Jamesville community and received a substantial group bonus each Christmas, as well. The original crew had stuck by the company with few exceptions. The work was conducted under highly informal conditions with a minimum of formal direction. Almost no supervisory paperwork was indulged in by the three working foremen who ran the actual operations under Mr. James' general supervision.

During the winter of 1950-51, the magnitude of the company's operations began to increase rapidly. The workforce passed the 100 mark shortly after the turn of the year. It reached 150 within a month after Brighton Young appeared on the scene. This latest increase was achieved as soon as the unfinished shell of the new wing could be equipped with heating outlets, which permitted assembly operations to be carried on there during final construction. Although both the forge shop and the wood shop doubled their capacities in the original plant area by taking over vacated assembly-room space, the assembly division, under its new layout, more than kept pace with the expansion of output by the other two units. This altered ratio had been planned by Mr. James, however, so that he could utilize available plant space and available unskilled, local labor to undertake emergency defense contracts. This plan enabled him to expand his facilities rapidly at relatively low cost, without placing undue pressure upon either the regular plant work force or the field sales force.

After looking over available alternative contract opportunities, Mr. James chose to become a subcontractor for the G.E. electronics department at nearby Electronics Park. He received several large orders involving mechanical-parts subassemblies for electronic ordnance equipment. Between 40 and 50 parts of varying sizes entered into each subassembly. The repetitive nature of the assembly process and the intricate fingerwork involved in its execution suggested the hiring of female labor to handle the new work on a simplified-task, assembly-line basis. In a matter of weeks after the initial contract was signed, a separate defense assembly division mustering 75 employees was in full operation.

During the month of June, Brighton Young served in the capacity of personnel-relations apprentice under Mr. Roland Clark, who doubled as office manager and personnel manager for the Medium Small Tool Company. One day during Brighton's last week in this department, Mr. Clark suggested casually that Brighton might wish to take on an extra chore for him some evening soon. Mr. Clark indicated that he himself had done some thinking about where the Medium Company was heading. He was particularly curious as to how company growth and development would affect the personnel-relations portion of the dual job he was performing. He stopped right there. He did not go on to explain his personal views on the subject, as Brighton had expected that he would.

The fact that a man could show such self-restraint intrigued Young. Just before closing time that afternoon, Brighton found a few spare minutes in which to start a checklist of his own ideas as to what Medium needed *re* personnel. He covered the major areas he had studied in his college personnel-management survey course. Some ideas in that course had dealt with small companies that had vaulted into World War II expansion programs without adequate personnel-relations policies and procedures. Medium Small Tool bid fair to repeat those errors at this time unless a more comprehensive program were set up than Brighton had seen in preparation as yet within the concern.

That evening, Brighton forsook his customary TV and book relaxation routine. He dragged out his college portable and started pounding the keys in staccato rhythm. Once the ice was broken, a flood of ideas and suggestions began to flow. Brighton outlined a half dozen personnel functions and

services that hard-pressed Roland Clark had not yet found time to inaugurate. Brighton felt inspired to sell this program to the company on a "deficit" basis, suggesting that its adoption was long since overdue.

Major features included 1) standard personnel-record forms for use by company employees, 2) establishment of individual, master-record folders in which to build up a comprehensive written file on each employee, 3) standardized job descriptions, 4) establishment of a positive safety program above and beyond the mere filing of state-required reports, 5) formulation of definite company policies with regard to such items as vacations, sick leave, layoffs, wage and bonus system, and promotions, and 6) dissemination of information concerning company policies among employees through the medium of a company handbook and/or company newsletters.

Brighton stressed his belief that the company had already incurred the need for such common personnel relations arrangements months ago when it expanded beyond the "friendly fifty" employee stage. The company had failed to adjust to existing conditions as yet in these fundamental respects.

Brighton went on to prescribe a personnel-relations program for inauguration on a "foresight" basis during the remaining months of 1951. Its major features included 1) development of a relatively simple job-evaluation system, 2) establishment of a definite grievance procedure, 3) adoption of a suggestion system, 4) formulation of company policies and procedures with reference to possible unionization of the company work force, 5) establishment of a regularized company social program to build employee morale, and 6) inauguration of a regularized supervisory-training session, with particular emphasis upon possible two- and three-shift operation. He concluded his report with a strong recommendation that Medium Small Tool place its personnel-relations officer on a full-time basis with adequate records, reception and counseling space, and with secretarial aid.

This report, which Brighton submitted with last-minute misgivings to Mr. Clark, was visibly well received by that gentleman. He questioned Brighton closely about the purposes behind several of the more ambitious undertakings listed. In the end, he accepted the major suggestions, reserving judgment principally with regard to the sequence and timing of certain moves. By the week's end, both parties had talked out the subject to their mutual satisfaction, and the matter was apparently forgotten.

Unknown to Brighton, however, Personnel Manager Clark placed the report in General Manager James' hands the very day that he received it. Mr. Clark discussed the report with the general manager for two principal reasons. In the first place, it added impetus to a low-pressure campaign he had been conducting for several months to secure additional funds and authority for personnel-relations activities. In the second place, the report had convinced Mr. Clark that Brighton Young already had the makings of a useful addition to the firm's management team. As personnel manager, Mr. Clark was particularly alert to the shortage of qualified managerial talent that Medium Small Tool faced at this critical juncture in its development.

General Manager James absorbed the personnel manager's comments with more than ordinary interest. It happened that he, too, had been mulling over a problem situation that was confronting him with increasing urgency within the production area he directly supervised. Upon Brighton Young's return for a second-round production assignment the next week, General Manager James at once subjected him to an "acid test"—one in which an unwary principal might well find himself unaccountably burned. Mr. James casually suggested to Brighton, as they planned details of a scheduled 6-months' stint by the young man in the production area, that he devote the first week to refreshing himself on current activities in the shops and assembly divisions before planning in greater detail. He added as an apparent afterthought that he personally would be interested in any in-

spirations Brighton might have, particularly with reference to the nontechnical aspects of the field of production.

Here again, Brighton's problem-solving bent was such that the casual remark rang a bell with him. As he strolled through the plant the next day, he oriented his attention to relationships among things, rather than to the nature of the things themselves. Within a matter of hours, the "great idea" was born. Its subsequent development to maturity was recorded by Brighton Young on paper, as follows:

A Production Control System for Medium Small Tool [3]

FACTOR ANALYSIS

Central Problem: Should the Medium Small Tool Company adopt a more formal and more centralized system of production control?

Question 1. Will the process of establishing a more formal and more centralized system of production control absorb an *undue* amount of management time and energy?

"Yes" Column

a. Production of 147 varieties of small tools on a job-lot basis for company warehouse or for special customer order calls for more complicated and more detailed control procedures than would a continuous-flow production line consisting of one or a few items.
b. Emergency military orders on a subcontract basis further complicate the situation at this time, for production-control problems in this division differ markedly from problems encountered in small-tool production.
c. More formal and more centralized production control would require more detailed data than are now available with respect to the following: 1) detailed specifications of parts for all items, 2) carefully checked data on appropriate maximum and minimum inventory quantities, 3) detailed studies of economic lot sizes for production or purchase of each part, 4) detailed knowledge of the production capacity of individual pieces of equipment and of individuals within each department, 5) detailed data as to the sequence of operations to be performed on each part, 6) detailed data as to the standard time allowed for each part, 7) detailed data as to delivery promises and as to sales forecasts. Procedures designed to secure these data would have to be established.

"No" Column

a. Because job-lot production of numerous varieties of products is more difficult to control than is continuous-flow production of one or a few varieties, more time and energy *should* be devoted to production control for efficient operation.
b. As emergency military orders complicate the situation, more time and energy *should* be devoted to production control to maintain efficient operation.
c. The more detailed data required for the successful operation of a formal, centralized system of production control are items of basic importance to the business, management might usefully draw them together for control purposes.

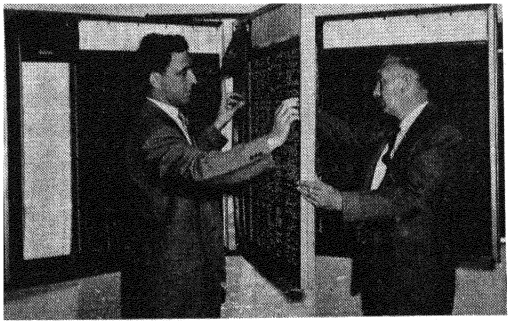


Figure 16-10: The expenditure of funds for production control equipment need not be large in relation to expenditures normally made for other services. (*Wassell Organization*)

[3] The general format adopted in this section of the Budgets and Reports chapter is that developed by the Harvard Graduate School of Business Administration in its "Elements of Administration: General" course in business-report writing. Harvard has for many years pioneered in the development of effective techniques for business problem analysis and report writing.

Conclusion 1. The process of establishing a more formal and more centralized system of production control will require a relatively heavy investment of management time and energy, but the information that may be obtained and the control that may be exercised promise to be of great usefulness to management.

Question 2. Will the establishment of a more formal and more centralized system of production control require a heavy investment of funds?

"Yes" Column

a. Production-control boards, file drawers, standard forms, and operating personnel will have to be set up in a central office.
b. Certain production-control materials and forms will have to be distributed among the operating departments.

"No" Column

a. The expenditures required to establish the proposed system need not be large in relation to expenditures normally made for other types of services.
b. Expenditures by individual departments for production-control materials would be nominal and might be less than if each department were required to buy its own equipment.

Conclusion 2. The establishment of a more formal and more centralized system of production control will not require a heavy investment of funds, as judged by normal business standards for expenditures related to service activities.

Question 3. Will the establishment of a more formal and more centralized system of production control tend to concentrate authority unduly in a staff official at the expense of departmental supervisors?

"Yes" Column

a. A formal, centralized production-control system requires the shifting of certain activities from departments to the central office.
b. Departmental supervisors must conform to the standard system if it is to be effective in operation.
c. Departmental supervisors must report emergency situations to production control instead of merely determining action on their own.

"No" Column

a. By shifting certain production-control activities from the departments, the new system frees time that the supervisor can devote to more effective use of his main-line authority.
b. Centralized production control is designed to aid supervisors and to increase the effectiveness of their control over departmental activities.
c. Centralized production control is designed to keep problems from arising constantly on an emergency basis by devising a more inclusive system.
d. Supervisors may still make specific decisions on detailed use of machines and men within the department as production control focuses more upon over-all capacity than upon detailed assignments within subdivisions of departments.

Conclusion 3. Establishment of a more formal and more centralized system of production control will represent a considerable shift of authority, with respect to production control, away from departmental supervisors and toward the production-control supervisor, but this shift is not designed to reduce the importance of the contribution of departmental supervisors to plant operations.

Question 4. Will the establishment of a more formal and more centralized system of production control require an excessive amount of organization time and energy to operate?

"Yes" Column

a. Considerably more paperwork will be required if the formal and centralized system is to operate successfully.
b. The formal, centralized system calls for considerably more detailed knowledge of specific components of a control system than does the existing informal system.
c. Personnel are required to man the centralized office.

"No" Column

a. The paperwork is largely routine in nature, and it results in a lessening of pressure upon line supervisors within the organization.
b. The more detailed knowledge of component elements of a control system is of great value to company management.
c. The personnel required in the central office assume some of the burden that had been carried within the various operating departments and also perform additional services of considerable value to the company.

Conclusion 4. Establishment of a more formal and more centralized system will result in an over-all increase in time and energy devoted to production control activities, but 1) the burden upon line supervisors will not be increased and 2) the activities of the centralized production control personnel will presumably be of considerable value to the firm.

Question 5. Will the establishment of a more formal and more centralized system of production control offer advantages which cannot be realized through continued use of the existing system?

"Yes" Column

a. The centralized control and the more detailed control should improve the effectiveness of operations as follows:
   1) time lost by men waiting for machines and materials should be minimized;
   2) fuller utilization of equipment should be achieved;
   3) inventories of raw materials, in-process materials, and finished goods can be kept at minimum levels with greater safety;
   4) procurement of materials and delivery of output are placed upon a more orderly basis;
   5) line supervisors are relieved of the burden of operating independent control systems;
   6) employee morale is raised to the extent that operations are improved and supervisors are freed for line duties.
b. In order to achieve the above results, the existing system would have to become more formal and more centralized, because the personnel operating the current system are presumably doing a reasonable job under the circumstances.

"No" Column

a. Increased awareness of the need for more effective control of production might lead company personnel to operate the existing system more effectively than is now the case.
b. The advantages claimed for a formal, centralized system are matters of degree and not differences of kind.

Conclusion 5. Although increased emphasis upon production control might lead to improved results with the existing system, more detailed and more centralized control offers the prospect of improvements of great value to the firm.

Question 6. Will the establishment of a more formal and more centralized system of production control prove economical and feasible for a firm the size of Medium Small Tool?

"Yes" Column

a. Medium Small Tool has already expanded far beyond the small, one-room-shop stage, so it needs a more expanded form of organized production control than was formerly the case.
b. A more formal and more centralized system of production control may still be tailored specifically to the needs of this particular firm.
c. The production-control system utilized can be expanded and contracted in accordance with the future needs of the firm within wide limits.

"No" Column

a. There is some risk involved in the change-over from an existing system to a new system.
b. A "shakedown" period must be anticipated, during which time the supervisory force will be learning the mechanics of the new system.

Conclusion 6. Although some risk is present and some initial errors must be anticipated, a more formal and more centralized production control system can be devised to fit closely the present and future needs of the Medium Small Tool Company.

Final Conclusion. A more formal and more centralized production-control system would be worth the time, energy, and cost required to devise, install, and operate it. Such a system would require greater expenditures for production-control purposes than is now the case, but its probable advantages in terms of results to be achieved appear to outweigh its possible disadvantages by a wide margin. The issue, then, resolves itself into matters of detail as to what specific type of formal, centralized production control is best suited to the current and future needs of the Medium Small Tool Company.

(Brighton Young's detailed recommendations as to a specific production-control system are omitted from this abbreviated presentation.)

THE OUTLINE

Introduction

I. *Central Problem:* Should the Medium Small Tool Company adopt a more formal and more centralized system of production control?

II. *Final Conclusion:* A more formal and more centralized production-control system would be worth the time, energy, and cost required to devise, install, and operate it.

III. *Basic Reasoning:* Such a system would require greater expenditures for production-control purposes than is now the case, but its probable advantages in terms of results to be achieved appear to outweigh its possible disadvantages by a wide margin. The issue, then, resolves itself into matters of detail as to what specific type of formal, centralized production control is best suited to the current and future needs of the Medium Small Tool Company.

Body of Report

I. Management time and energy absorbed in process of establishing system.
   A. Amount of time and energy.
      1. Production of 147 varieties of small tools on a job-lot basis calls for complicated and detailed procedures.
      2. Emergency military orders complicate the situation.
      3. More formal and more centralized production control requires more detailed data than are now available.
   B. Significance of time and energy required.
      1. More time and energy are expected to be required in job-lot production to ensure efficient operation.
      2. The same holds for military orders.
      3. The more detailed data are useful for control purposes and are worth considerable cost in time and energy.
   C. Conclusion.

      Process of establishing system will require a relatively heavy investment of management time and energy, but the information and the control promise to be of great usefulness.

II. Investment required to establish system.
   A. Size of investment.
      1. Equipment, materials, and personnel for central office.
      2. Materials for operating departments.
   B. Significance of investment required.
      1. Central office need not be large in relation to other normal expenditures.
      2. Departmental expenditures would be nominal.
   C. Conclusion.

      Establishment of system will not require a heavy investment of funds, as judged by normal business standards.

III. Concentration of authority in staff official at expense of line supervisors.
   A. Degree of concentration.
      1. Certain production-control activities would shift to central office.
      2. Conformity to standard required for effectiveness.
      3. Clearance through production control is necessary.
   B. Significance of concentration.
      1. Frees time of supervisors for main-line duties.
      2. Increases effectiveness of supervisory control over activities.
      3. Keeps problems from constantly arising as emergencies.
      4. Detailed departmental assignments left to supervisors.
   C. Conclusion.

      Establishment of system will shift authority from departmental supervisors toward production-control supervisor, but shift is not designed to reduce the importance of departmental supervisors.

IV. Organization time and energy required to operate system.
   A. Amount of time and energy.
      1. More paperwork.
      2. More detailed knowledge of specific components of control system.
      3. Personnel for central office.
   B. Significance of time and energy required.
      1. Paperwork is routine and lessens pressure upon line supervisors.
      2. Detailed knowledge of component elements of control is useful.
      3. Personnel assume some of departmental burden and perform additional services.
   C. Conclusion.

      Establishment of system will increase time and energy devoted to control activities, but 1) burden upon line supervisors will not be increased and 2) activities of central personnel will be of value to firm.

V. Advantages of central system over existing system.
   A. Nature of advantages.
      1. Improve effectiveness in regard to a) time lost by waiting, b) utilization of equipment, c) size of inventories, d) orderly procurement, e) burden on line supervisors, f) employee morale.
      2. Existing system must approach central system to match advantages.

B. Significance of advantages.
   1. Increased emphasis upon existing system might reduce gap between systems somewhat.
   2. Advantages are matters of degree, not kind.

C. Conclusion.

   Although increased emphasis upon production control might improve results with existing system, central system offers prospect of improvements of value.

VI. Feasibility of system for Medium Small Tool.

A. Needs of the company.
   1. Expanded shop calls for expanded control system.
   2. System may be tailored to needs of firm.
   3. System may be expanded and contracted in accordance with needs.

B. Significance of efforts to meet needs.
   1. Some risk is involved in changeover to new system.
   2. "Shakedown" period needed to learn new system.

C. Conclusion.

   Although risk and errors must be anticipated, system can fit needs of the firm.

Final Conclusion

I. Worth and advantages of new system are major considerations in decision.
II. Moderate increase in production control expenditures has minor significance.
III. Increased time, energy, and cost under new system are more than offset by probable advantages.
IV. Issue resolves itself into matters of detail as to specific type of formal, centralized production control needed by company.

(Brighton Young's outline of a specific production-control system is omitted from this abbreviated presentation.)

THE WRITTEN REPORT

Statement of the Problem and Recommended Action

The Medium Small Tool Company is faced with the problem of deciding whether or not it should adopt a more formal and more centralized system of production control. In this report, it is recommended that such a system be authorized at this time. A more formal and more centralized production-control system would be worth the time, energy, and cost required to devise, install, and operate it.

In arriving at this recommendation, I have noted that such a system would require greater expenditures for production-control purposes than is now the case. Nevertheless, it is my opinion that the probable advantages of a formal, centralized production-control system, in terms of results to be achieved, appear to outweigh its possible disadvantages by a wide margin. In line with this analysis, the issue then resolves itself into matters of detail as to what specific type of formal, centralized production-control is best suited to the current and future needs of the Medium Small Tool Company. The key considerations that have led to the above recommendation are presented below.

Demands upon Management in Establishing System

It is important that the process of establishing any proposed new system of production control not be such as to absorb an undue amount of management time and energy. Both the production-control problem and the problem of conserving management time and energy are particularly important within the Medium Small Tool Company at this critical juncture. The production of 147 varieties of small tools on a job-lot basis for company warehouse or for special customer order calls for more complicated and more detailed control procedures than would, for instance, a continuous-flow production line producing one or a few items. Emergency military orders on a subcontract basis further complicate the situation at this time as production-control problems in this division differ markedly from problems encountered in small tool production.

The process of establishing a formal, centralized production-control system would place certain demands upon management time and

energy. Such a system would require more detailed data than are now available with respect to the following:

1. detailed specifications of parts for all items;
2. carefully checked data on appropriate maximum and minimum inventory quantities;
3. detailed studies of economic lot sizes for production or purchase of each part;
4. detailed knowledge of the production capacity of individual pieces of equipment and of individuals within each department;
5. detailed data as to the sequence of operations to be performed on each part,
6. detailed data as to the standard time allowed for each part;
7. detailed data as to delivery promises and as to sales forecasts.

Procedures designed to secure these data would have to be established.

Because job-lot production of numerous varieties of products is more difficult to control than is continuous-flow production of one or a few items, more time and energy *should* be devoted to production control in order to ensure efficient operation. The emergency military orders that Medium Small Tool has taken on also entail an increase in emphasis upon the task of controlling production for maintenance of efficient operation. It should be noted that the more detailed data required for successful operation of a formal, centralized system of production control are items of basic importance to a business enterprise. Thus, although it may be conceded that the process of establishing a more formal and more centralized system of production control would require a relatively heavy investment of management time and energy, it is important to observe that both the information that may be obtained and the control that may be exercised promise to be of great usefulness to management.

Investment Required to Establish System

In the interest of brevity Brighton Young's treatment of this topic is omitted from this text. The approach used closely parallels the writing style illustrated in the preceding paragraphs, and the content used is substantially that contained in the preceding section labeled "Factor Analysis."

Other topics that have been omitted in this illustrative sampling of Brighton Young's report are as follows:

Concentration of Authority.
Cost of Operating System.
Advantages of Central System.
Feasibility of System for Medium Small Tool.
Summary.
Appendix A. Detailed Recommendations as to a Specific Production-Control System for Medium Small Tool.

* * *

A Footnote on the Young Case

General Manager James accepted Brighton Young's report on production control in matter-of-fact fashion. Inwardly, he was, of course, tremendously pleased. He felt akin to the angler who is rewarded for a stealthy approach to the pool by having a fighting beauty rise with his first cast. Such rewards are generally as rare in occurrence as they are in enjoyment.

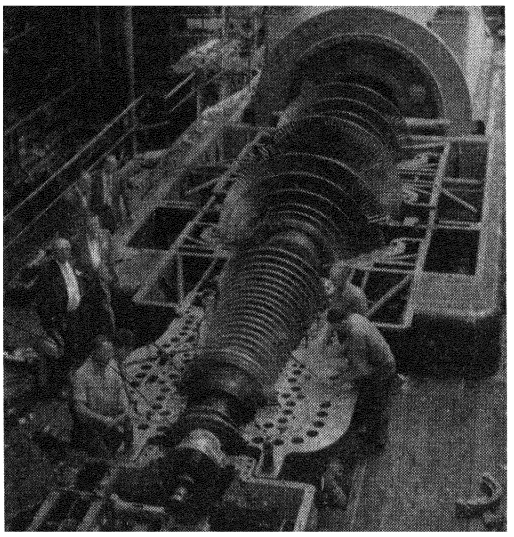
Within the week, Brighton was summoned before the board of directors of Medium Small Tool at the close of a working session of that important body. Mr. James introduced Brighton to the gentlemen of the board as his newly appointed production-control manager. He indicated that Brighton would undertake the task of installing the system whose general outlines they had just approved. Brighton would report directly to General Manager James who personally oversaw the operations of the several shop and division supervisors within the production area.

In this fashion, Brighton Young's projected 24-month training program was cut to a 22-week training period. He was placed in a responsible post with suitable salary adjustment. He was, from that point on, a marked man within the management organization. It should be noted carefully that Brighton passed the human-relations test, as well as the business-problem analysis and report writing test, which General Manager James set up for him. He did not foist reports on unwilling executives with great display. He did not insist that he become a top-flight consultant for the entire firm within six weeks' time, as has been the case in other rather ill-fated launchings of business careers by eager young graduates. Brighton Young was, in many respects, exceptional.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	313–314	What role may the tool of budgetary control play in business administration?
2	314–316	In your opinion, once Nicholas Roskin agreed to install needed business procedures and controls, might he have been well advised to seek new capital from John Grover's bank, rather than to share control of his venture with Lee Jackson? Discuss.
3	316–318	Of what use is a break-even chart as a tool of management?
4	318–322	How is it possible for management to segregate a specific variance of actual cost from normal or standard cost with the comment that this discrepancy results from the volume variance?
5	318–322	Why, in your opinion, did Lee Jackson bother to include as separate items estimated variances of perhaps $30, $45, and $75, in the monthly statements of the Trans-World TV Corporation when the total sales involved amounted to at least $12–18,000 monthly? Of what significance were these small items?
6	322–323	Might not the management of the expanded Trans-World TV Corporation have been well advised to schedule frequent and detailed staff meetings devoted to money problems, thereby avoiding the paperwork entailed in the operation of a formal budgetary-control system?
7	323–326	What role may the tool of report writing play in business administration?
8	323–326	In your opinion, to what extent is it actually possible to adopt a "one-at-a-time" approach in the analysis of basic factors affecting the central problem in a business case situation?
9	326	Would not a strongly-worded, positive-action type of report be more suited for a busy executive than a report that, itself, points out weaknesses in and limitations of the recommendations that it advances? Discuss.
10	326–336	In your opinion, would it have been desirable for Brighton Young to have presented his "personnel-relations" and "production-control" ideas as verbal reports to the individuals having responsibilities in these areas, rather than to "freeze" his analyses and recommendations in written reports? Discuss.
11	326–336	Does it not require nearly three times as much time and effort to make up a factor-analysis sheet, an outline sheet, and a draft report than would be required to develop a rough-draft report directly? Discuss.

17 Administration of a Business Unit: Organization



*THE ADMINISTRATION OF A BUSI-*ness unit has been the broad subject of our study throughout this text. Up to this point, however, we have largely assumed that the unit we were observing was adequately organized to perform successfully the functions for which it was set up. We first visualized a business organization in its entirety in chapter 4, during our study of R.C.A. The economic purposes of this organization were analyzed in chapter 5. We came to closer grips with component parts of a second business organization, G.E., in chapters 6 and 7. The respective roles of labor, management, and facilities in business organization occupied our attention in this section. The legal organization of business enterprise formed the subject matter of chapter 8. We then concentrated our attention on the tasks of specific departments of the business firm in chapters 9–15, as we studied the elements of business administration. One important phase of this study was that of personnel relations and human relations in chapter 11. All of this previous "experience" will stand us in good stead, now, as we endeavor to grasp the central concepts and problems of administrative organization.

Photograph at top of page: Effective administrative organization generates a powerful flow of energy from a closely-knit, smoothly operating unit, as symbolized by the G.E. Steam-Turbine-Generator. (*General Electric Company*)

CONCEPT OF ORGANIZATION

The administrative organization of a company is a structure set up by management to serve as a framework within which and through which the policies and activities of the firm are to be determined and carried out. Administrative organization is a management tool used in regulating the mutual relationships of individuals and groups comprising the personnel of a firm. Through administrative organization, the basic ingredients of an enterprise—men, machines, and materials—are combined in a manner designed to make possible the achievement of the goals for which the firm has been established.

NEED FOR ORGANIZATION

An isolated individual would not find need for administrative organization because, through necessity, he must rely entirely upon his own activity in seeking to attain goals that are important to him. An isolated family, on the other hand, does find

occasion to use administrative organization. Whenever two or more persons are associated in any endeavor, administrative organization comes into play as a tool for the efficient accomplishment of whatever tasks these persons jointly undertake.

If each person in a group were to try to do everything by himself the possible advantages of collective action would be lost. The very proximity in which the individuals worked would lead to occasional conflicts of interest and action, as, for instance, when each endeavored to kill and eat the same animal. Some understanding must be reached among the individuals as to the rights and responsibilities of each with respect to the other.

On many occasions it might be found that two persons can accomplish a goal that would be beyond the capabilities of one person alone. The pushing of a large boulder away from a cave opening might be a case in point. In other cases, two or more persons may achieve considerably more through group effort than they would through individual effort. The building of a large council hut from heavy timbers might illustrate the multiplier effect of energy expended in cooperative efforts. In still other instances, the group can achieve more by acting cooperatively and drawing upon the special talents of individuals than could individuals within the group if they had to remain generalists or "jacks-of-all-trades." The wife might sew and cook for the family unit while the husband applied his strength to hunting and farming duties.

An individual who achieved the distinction of being the best cook or best hunter within a particular group might take pleasure in hearing favorable comments on his performance. He might continue and redouble his efforts long after his own personal needs are satisfied, so that he might continue to merit the plaudits of the crowd. He might also derive personal satisfaction in contemplating the pleasure that his actions give to other members of the group. This illustrative list of reasons underlying group action and group organization might be continued at length if our text were devoted to this subject alone.

FACTORS DETERMINING THE FORM

It may be conceded that cooperative action by members of a group entails organization. An important question still remains as to just what form this organization is to assume in specific instances. The form of organization that is appropriate for a business enterprise is derived from the interaction of a number of varied factors.[1] Some of the more important ones may be set forth as follows:

1. The objectives and policies of the firm.
2. The activities required to carry out major policies.
3. The groups into which these activities are classified by management.
4. The authority and responsibility pattern required to ensure adequate performance of these activities.
5. The coordinating framework required to ensure cooperation among groups.
6. The techniques employed for arriving at decisions.
7. The methods used in putting decisions into effect.
8. The personalities of the individuals comprising the firm, with particular emphasis upon those of key executives in the upper levels of management.

1. Influence of objectives and policies. The owners or managers of a firm must arrive at certain basic decisions concerning the major objectives and policies to be followed by the firm. The type of enterprise to be conducted, the nature of the products to be manufactured and distributed, the methods of manufacture and of distribution, and the location of these activities are characteristic decisions required in the area of objectives and policies. The reaching of decisions on these matters by top management is a func-

[1] See William H. Newman, *Business Policies and Management*, pages 375–518, Cincinnati: South-Western Publishing Company, 1949, for a comprehensive treatment of this subject.

tion of "administration" in the broad usage of that term. It is obvious that administrative decisions of this type will have direct and important influence upon the business organization required to implement these decisions. A policy decision to sell directly to retailers, for instance, will have immediate organizational consequences in the marketing segment of the organization chart of the firm. A decision to purchase the plant of a rival firm in a nearby town for expansion purposes will lead to organizational changes in the production area. Shifts in objectives and policies from time to time may well entail shifts in the administrative organization required to implement the decisions of the policy-formulators.

2. Influence of management. Managerial action is involved in the implementation of the policy decisions of top business administrators. This managerial function is performed by the chief executive of the company and his supervisory staff. Management executes administrative policies laid down by the board of directors as representatives of the owners of the firm. The managerial actions needed to execute policies must be classified into manageable groups of activities if they are to be carried out in orderly fashion. Specific individuals should be assigned to supervise the carrying out of specific activities in specific areas. Typically, a number of alternative methods or bases for classifying interrelated activities exist. Managerial activities are commonly classified for organizational purposes in one or more of the following ways:

a. by types of processes used in producing goods and services.

b. by types of products turned out or services rendered.

c. by types of customers consuming the products of the firm.

d. by the geographic location of the production and/or distribution activities of the firm.

e. by the nature of the activities or functions performed by particular personnel and equipment.

3. Influence of types of activity groups. The decisions of business managers as to the bases to be used in classifying the various activities carried on by the firm are of great significance in determining the type of administrative organization to be established by the firm. This point becomes evident when we consider the consequences of classifying activities under categories a. through e. in section 2 above.

a. *Types of processes:* In the Medium Small Tool Company referred to in chapter 16, the division of the production department into a forge shop and a wood shop illustrates administrative organization along process lines. The series of operations performed by the forge shop on the great variety of parts flowing through it are basically alike from a process point of view. The same analysis holds for the wood shop. The forge shop's work is basically different from that performed in the wood shop. When operations are classified on a process basis, as in this instance, the forge-shop supervisor may specialize in problems of processing metal, while the wood-shop supervisor devotes his attention to problems of processing wood. Each can expect to become more efficient in his specialty for this reason.

On the other hand, the separateness of the two departments working on parts for the same products may cause problems of coordination within the plant. Unless the flow of work from the forge shop matches over-all and in detail the flow of work from the wood-shop, the general manager, who is responsible for the forge shop, the wood shop, and the assembly division, will find that his plant output is retarded by bottleneck and conflict situations.

b. *Types of products:* Under appropriate circumstances, the company might decide to organize some of its activities by products turned out, rather than by processes employed. Prior to 1951, the firm had just one assembly division. Upon taking on emergency defense subcontracts for G.E., Mr. James, the general manager, opened a separate defense assembly division, which was to concentrate upon the assembly of mechanical parts for electronic ordnance

Unless the division of activities between territorial outposts and the central office is judiciously made, however, the geographical basis of administrative organization may result in loss of possible benefits derived from centralized handling of problems basically similar in a number of territories. Duplication of effort, dispersion of strength, and slowness in communication are ills oftentimes besetting firms that over-emphasize the use of geographical or territorial organization.

c. *Nature of functions:* In our Medium Small Tool Company illustrative case under section 3b. above, we noted that supervisors of the two assembly divisions each had relations with purchasing, personnel, and marketing representatives, as well as with production control, accounting, maintenance, and shipping representatives. In each instance, a single department organized on a functional basis had been set up to serve the needs of all the primary departments in a particular area. The same purchasing department placed purchase orders for iron and steel needed by the forge-shop supervisor and for oak and hickory needed by the wood-shop supervisor. The same personnel department hired new hands for the forge shop, the wood shop, and the two assembly divisions. The same payroll section of the accounting department issued weekly checks to all plant employees and monthly checks to the salaried executives of the firm. The same maintenance department repaired the salesmen's automobiles and the stenographers' typewriters. Responsibility and authority in each of these cases were set up on a functional basis to promote uniform service by specialists for needs arising anywhere within the company.

An organizer with separatist tendencies might break his firm down into a jumble of discrete parts under the logic of functional purity. The span of control set up for the chief executive might be stretched beyond reason under such an arrangement. It is, therefore, necessary to combine similar or related subfunctions into a family-type functional department so that these major units may be sufficiently limited in number. Subunits, which have the same objectives and/or which require the same types of talents and abilities, should be fitted into a limited number of cohesive functional departments. Once again, the advantages of detailed specialization must be tempered by adjustments required to ensure effective coordination of the activities of separate units.

It may be noted that the same firm was used to provide illustrations of process, product, customer, geographic, and functional bases for administrative organization. This condition is the rule, and not the exception, in actual business practice. Effective administrative organizations are fashioned on a tailor-made, case basis to fit a given and complex set of facts. A live administrative organization is almost constantly in process of adjustment to keep pace with the train of events within and without the firm. Frequent reviews of existing organizational policies and practices are one of the prime responsibilities of business management in its effort to utilize effectively the tools with which it may seek to achieve major objectives.

4. Influence of authority and responsibility patterns. Authority is defined as "the right to command or to act." [2] In a good society,

[2] Definition of term "authority":

au·thor'i·ty (ô·thŏr'ĭ·tĭ), *n* ; *pl.* -TIES (-tĭz). [ME *autorite, auctorite*, fr. OF *autorité*, fr. L. *auctoritas* See AUTHOR.] **1** Legal or rightful power; a right to command or to act; power exercised by a person in virtue of his office or trust; dominion; jurisdiction; authorization; as, the *authority* of parents over children; the *authority* of a court.
By what *authority* doest thou these things? *Matt.* xxi 23
2. a A person, or a board or commission, having quasi-governmental power in a particular field; as, the Port *Authority*. **b** (Chiefly in *pl*.) Government; the persons or the body exercising power or command, as, the local *authorities* of the States; the military *authorities*.
3. One that is claimed, or appealed to, in support of opinions, actions, measures, etc. Hence: **a** Testimony; witness. "And on that high *authority* had believed." *Milton*. **b** A precedent; a decision of a court, an official declaration, or an opinion, saying, or statement taken as a precedent. **c** A book containing such a statement or opinion, or the author of the book. **d** Justification; warrant.
4. Power derived from opinion, respect, or esteem; influence of character, office, or station, or mental or moral superiority, and the like; claim to be believed or obeyed; the accumulated weight of the expressed opinions of the great men of the past; as, a historian of no *authority*; a magistrate of great *authority*; tradition and *authority*.
Syn. — Command, dominion, competency. See JURISDICTION, INFLUENCE.

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those in authority have "a legal or rightful power" to hold a position of command. It is of the utmost importance that every person within an organization know whose command he is to obey and to whom he himself has the right to issue orders. If a person in middle management has no direct superior to obey, through some oversight, he may well grow confused. If such a person has several superiors working at cross-purposes, he will certainly grow confused. In most instances, it is well to concentrate authority for specific functions in the hands of single individuals.

Responsibility is defined as "a charge for which one is responsible or accountable." [3] It may also include "moral responsibility." Effective organization calls for the assignment in clear and unmistakable fashion of responsibility for every area of the business and for every task that is to be performed. Duties cannot, of course, be spelled out to the last detail. Nevertheless, the general or over-all responsibility of each member of the organization should be set forth explicitly to minimize confusion and misunderstanding.

It may readily be seen that authority and responsibility should be coequal in scope. If one employee has the responsibility for performing a task while the authority to proceed is withheld from him, the employee is placed in an untenable position. Interpersonal frictions and intrapersonal frustrations almost invariably spring from anomalies of this sort.

Authority without responsibility is equally unacceptable within democratic society, as the whole history of our struggles against totalitarianism of the right and the left will bear witness. Many administrative organizations are complicated still further by inclusion of systems of checks and balances designed to keep interrelated grants of authority in harmony within the firm, and yet intended not to delay positive action unduly. Interdepartmental committees are frequently established for the purpose of resolving conflicting interests of this type. These committees frequently serve as educational devices for the broadening and sharpening of executive talent as well.

Four major forms of administrative organization used as structures within which to distribute grants of authority and responsibility may be listed as follows:

a. Line organization
b. Functional organization
c. Line-and-staff organization
d. Committee organization

Although we recognize that these four types of administrative organization shade into one another in actual practice and are present in mixed form in any single organization, we may still profit by inspecting the distinguishing characteristics of each element in turn.

a. *Line organization.* Line organization refers to an administrative organizational pattern in which lines of authority extend vertically from superior to subordinate personnel without being limited as to function and without being modified by use of staff specialists or standing committees to aid the chief executive and/or his departmental officers. In such an organization, lines of authority and responsibility are crisp and clear, as indicated in Fig. 17–2.

At one time, military organizations featured a straight-line organization. The development of specialized functional activities, such as the quartermaster or supply corps and the engineering corps, has long since wiped out the simplicity of a pure line organization for army and navy units. In business administration, too, the development of specialized management officials, who concentrate upon service functions or who conduct research and merely advise

[3] Definition of term "responsibility":

re·spon'si·bil'i·ty (rĭ·spŏn'sĭ·bĭl'ĭ·tĭ), *n.*; *pl.* -TIES (-tĭz). [Cf. F. *responsabilité*.] **1.** State or quality of being responsible. Specif.: **a** Accountability; also, moral accountability; as, to assume the *responsibility* for another's debts; to prove the *responsibility* of the accused **b** Reliability; trustworthiness; sometimes, ability to pay; as, to question the *responsibility* of one seeking a loan. **2.** That for which any one is responsible or accountable; as, to seek relief from his *responsibilities*.

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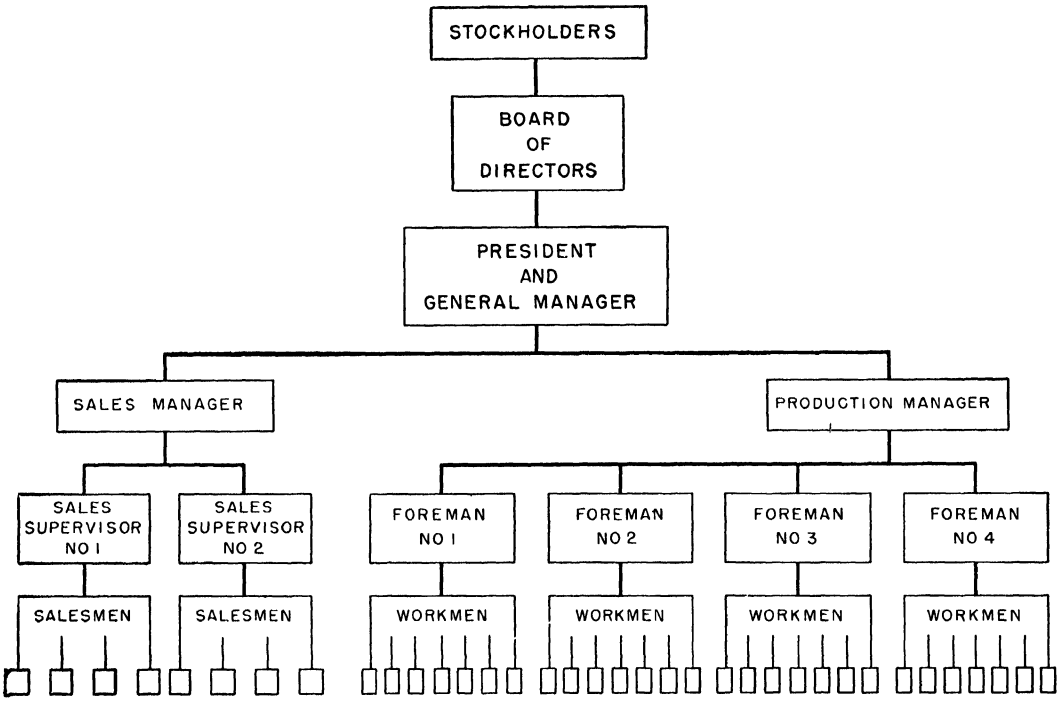


Figure 17-2: Line Organization.

line officers, has reduced the prevalence of strictly line forms of organization.

Advantages that may be derived from line organization include[4] 1) simplicity of organizational pattern, 2) fixed and unified nature of responsibility, 3) directness of relationships, 4) ease of adjustment of formal organization to changing conditions, and 5) development of all-round officers qualified to take over higher positions of line command *within a department.*

Disadvantages that tend to limit the feasibility of simple line organization include 1) omission of use of specialists at executive levels, 2) tendency to overload key executives with pressing operating activities, with consequent neglect of long-range planning and policy formulation, 3) underdevelopment of cooperative features of group activity, 4) neglect of development of officers who have a broad understanding of the problems of the *firm as a whole*, such as is fostered by committee or staff discussions, and 5) difficulty in securing cooperation among departmental line officers and in coordinating the activities of various line departments when broad understanding is lacking.

b. *Functional organization.* Functional organization refers to an administrative organizational pattern in which executives specialize in particular areas of management problems and serve and advise all other departments of the company concerning the function or field in question. We have already discussed the classification of activities by functions in section 3, part e. above. In actual business practice, a number of functional departments, such as maintenance, personnel-relations, and purchasing,

[4] See William R. Spriegel, *Principles of Business Organization*, pages 47-69, New York. Prentice-Hall, Inc., 1946, for a thorough discussion of advantages and disadvantages of the major forms of administrative organization.

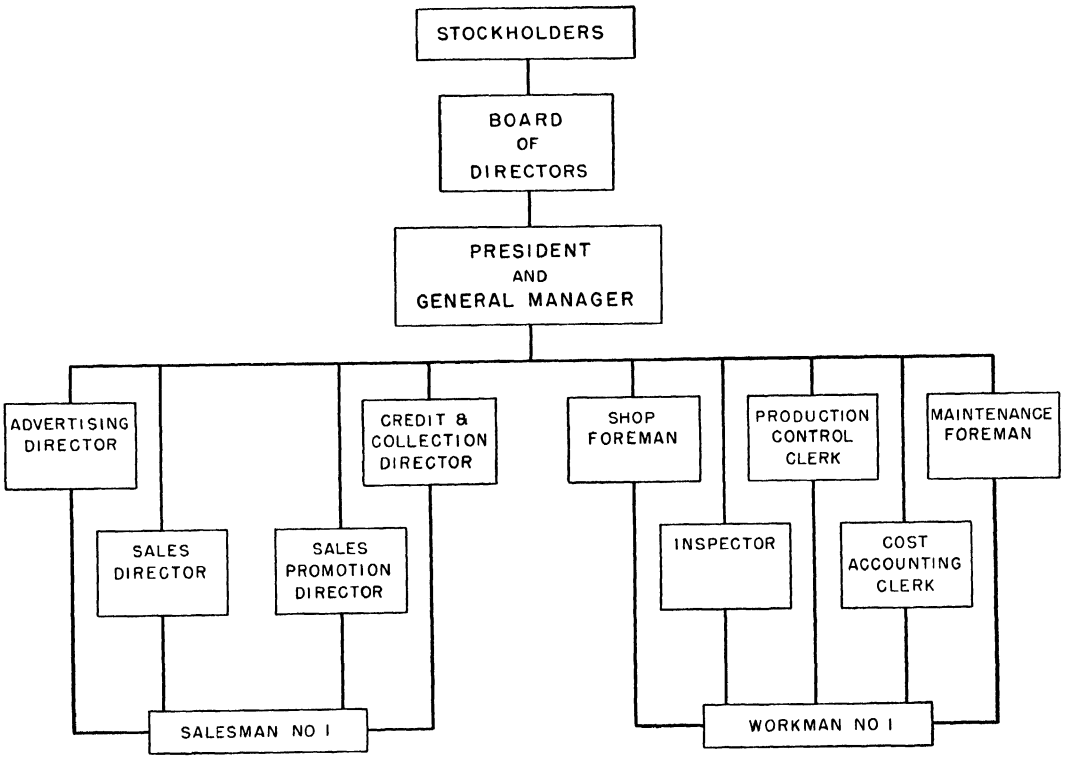


Figure 17-3: Functional Organization.

are established to serve the needs of the primary operating departments of the firm. The functional principle of organization might conceivably be extended, however, to cover the entire organization of a firm. Frederick W. Taylor, in recognizing the failure of straight-line organization to meet the growing need for specialization within management, proposed the substitution of functional organization in an almost pure form. An extreme form of functional organization is illustrated in Fig. 17–3.

Functional organization sacrifices the unity of command of a line organization for a high degree of specialization of activities assigned to any one executive. The workman and the salesman are responsible to several different "bosses," but each boss is concerned only with a specific, staked-out portion of the employee's job. The problems of defining areas and of handling possible gaps and overlaps between areas, of course, strike to the heart of functionalism.

Advantages of functional organization include 1) intensive utilization of the principle of specialization of labor at the managerial level, 2) reduction of need for men with all-round executive ability, 3) reduction of need for all-round employees at the nonsupervisory level, to the extent that the functional principle is extended downward to the ranks, 4) an increase in work satisfaction for specialists who are presumably doing what they "like to do," and 5) an increase in the number of occasions on which cooperative effort along "democratic lines" is called for.

Disadvantages of functional organization include 1) conflicts that arise in determining where one supervisor's authority ends and a second supervisor's authority begins, 2) difficulties encountered in fixing responsiblity for failure in specific instances, 3) uncertainty of nonsupervisory employees as

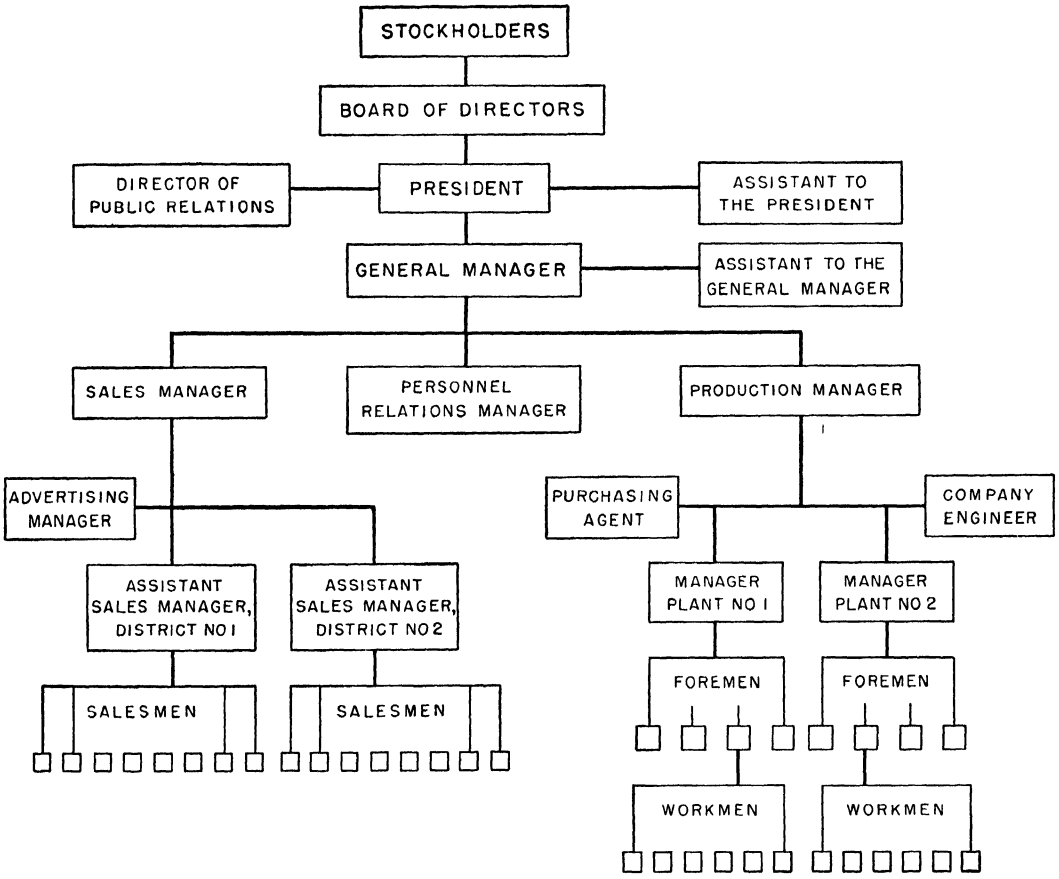


Figure 17–4: Line-and-Staff Organization.

to whom they should turn for advice and aid on problems calling for analysis, 4) slowness in action arising from divided control, and 5) reduction in opportunities for the training of all-round executives to exercise future leadership within the firm.

c. *Line-and-staff organization.* The difficulties experienced with line organization and with functional organization, in their pure states, suggest the need for a blending of the two forms in an effort to secure advantages of both, while retaining the disadvantages of neither. An approach to this happy state of affairs has been sought in the line-and-staff form of administrative organization, which predominates in the organization charts of business firms today.

Line-and-staff organization refers to an organizational pattern in which individual specialists and groups of specialists advise line officers concerning special aspects of their activities. The staff members concentrate their attention upon research and planning aspects of business problems. The line officials are thus freer to devote their attention to the execution phase of the policy, once it has been formulated. The authority and responsibility of staff members are advisory in nature and do not detract from the ultimate authority and responsibility of line officials. The line-and-staff form of organization is illustrated in Fig. 17–4.

The director of public relations and the assistant to the president act in a staff capacity to that official, whereas the general

manager is responsible to the president in a line capacity. The personnel-relations manager serves in a functional capacity, reporting to the general manager, but advising the production manager and the sales manager concerning their specific personnel-relations problems far more frequently than he advises the general manager concerning the over-all personnel-relations problems of the firm. The sales manager and the production manager, the two principal line officers under the general manager, have staff officers reporting to them, as well as line subordinates. The advertising manager serves in a staff capacity under the sales manager. He advises the assistant sales managers in charge of each district concerning advertising problems, but does not issue orders directly to them. The purchasing agent and the company engineer serve in a staff capacity under the production manager and do not have line authority over the various plant managers or the personnel serving under them.

Staff officials hold down jobs requiring much study and research. Functional officials specialize in one or a few of the many types of problems confronting line officials. Both types of specialists play important roles in planning the activities to be carried on by the firm. It is the line officials, however, who retain full authority and responsibility for the execution of these plans once they become a firm part of company policy.

Advantages of the line-and-staff form of organization include 1) to a large degree, the advantages of line organization, without the major disadvantages of the pure line form of organization, 2) to a large degree, the advantages of functional organization, less the major disadvantages of the purely functional form of organization, 3) the possibility of specialization, by executive personnel serving in staff capacities, considerably beyond that which may typically be achieved by functional officials who retain important measures of responsibility for day-to-day activities, 4) a strengthening of the decisions of both functional and line executives to the extent that they result from and are bolstered by adequate staff work, and 5) improved flexibility throughout the organization as new activities may be explored by staff members without forcing early readjustment of line arrangements.

Disadvantages of line-and-staff organization include 1) the danger that either line or staff officers may misconceive the relationship that should exist between the two types of activities, with consequent friction and ill-feeling, 2) the danger that certain line officers may place too great a reliance upon staff officers serving as their "brains," and 3) the danger that certain staff officers may act in irresponsible fashion, as they are not held directly responsible for the operating results brought about by implementation of their advisory opinions. It may be noted that these disadvantages may be largely avoided by an alert, tight-knit organization.

d. *Committee organization.* A fourth type of administrative organization, and one that is frequently set up as a "straw man" by writers, is the committee form of organization. Committees serve an extremely useful function when spotted strategically within a balanced business organization. Only under highly special and temporary circumstances, however, can and should committees comprise the entire organizational structure of a firm. It is this extreme form of committee organization that is the target for the righteous indignation of many writers on organization. The Electronics Department of G.E., while featuring an organizational pattern that is decidedly line-and-staff in character, utilizes committees effectively in several situations in which committees can and do serve useful purposes. (See Fig. 17–5.) These committees do not replace line officials, staff officials, or functional officials. They serve, instead, as devices for bringing the ideas of diverse groups of interested and informed parties to bear upon common problems that merit considerable deliberation and discussion within the organization. These committees are designed to assist line officials in the making of sound decisions which will

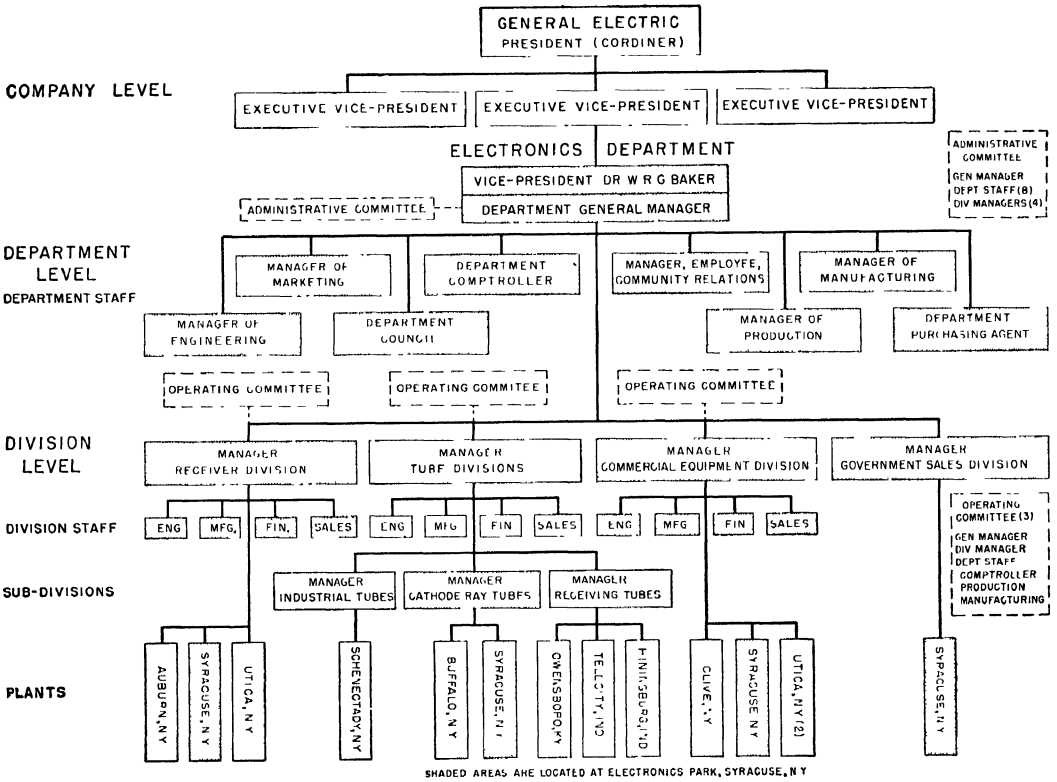


Figure 17–5: G.E. Electronics Department Organization, 1950.

be understood and accepted throughout the organization.

Advantages derived through appropriate use of committees within an organization include 1) coordination of the activities of committee members secured after each participant has voiced his own views and has heard the views of others, 2) education of committee members with respect to the requirements of the total situation being faced, and 3) balance derived from the presence and participation of all major parties concerned with a given problem situation.

Disadvantages of committee organization include 1) the danger of aimlessness and lack of initiative upon the part of a group under weak or divided leadership, 2) a tendency to arrive at decisions slowly after a time-consuming process of airing individual views on topics that contribute little to the discussion of the topic placed before the committee, 3) a tendency to straddle an issue, out of deference to a divergency of views within the committee, when the forthright adoption of one line of action or another is called for by the nature of the problem at issue, and 4) a tendency for "buck-passing" by committee members when confronted by the consequences of an ill-founded decision arrived at by an impersonal "committee."

5. Influence of the coordinating framework. Administrative organizations are shaped, in some degree, by the nature of the basic aims and objectives for which the firm exists. For instance, a firm that is frankly content to remain a "follower" company may omit basic research entirely from its engineering department. It may concentrate such engineering talent as it cares to support upon the task of converting ideas,

acquired through license or otherwise, into manufactured products. A firm whose prime objective is short-run profits for promoter-stockholders may reserve but a minimal place for a personnel- or a public-relations department within its administrative organization.

Administrative organizations are also shaped by the nature of the policies management elects to follow in working toward attainment of objectives. For instance, a firm that sells for cash only will not have an extensive credit department. A firm that sells unbranded merchandise to chain outlets will not feature a highly-developed advertising department in its distribution organization. The aims or objectives and the policies referred to above play important roles in orienting individuals within the company organization. They help to shape the coordinating framework required to ensure cooperation among groups working together within the firm. Knowing objectives and policies is as important for company employees as knowing the rules of the game is for ball players.

The tasks to be performed by individuals within these cooperating groups may be molded into specific jobs, using accepted principles concerning the specialization of labor. At the foundation level, there are nonsupervisory jobs that feature *doing*. At the lowest managerial level, supervisors of "straw-boss" bent are called upon to *get the work done*. In the middle and upper tiers of management, the emphasis shifts from actual execution of moves to the extremely important task of *planning* future moves in light of current and anticipated conditions. At the highest levels, management is concerned with the *general direction* of the company, in keeping with established objectives and policies.

The span of control that various levels of management find feasible to maintain serves as a key determinant of the administrative organizational pattern established by a firm. The span is essentially a psychological concept, which, in this case, refers to the number of subordinates that may report to a single superior officer. If the task to be performed is simple and routine, as in ditch digging, a single supervisor may direct the activities of up to half a hundred men.

If an effective incentive pay system is in operation for routine assembly work, the ratio of employees to supervisors may remain proportionately large for these more complex tasks. A point is soon reached, however, in the managerial levels, at which a single supervisor can effectively deal with the problems raised by only a handful of reporting officials who, in turn, have complex units reporting to them. The president or general manager of a large firm may be well advised to restrict to a half dozen or less the number of subordinates reporting directly to him.

In a complex organization, restriction of the span of control for any one man may involve the setting up of additional intermediate levels of management. In this manner communications may still funnel in and spread out as required without overtaxing the capacity of any specific management communication post.

The use of the "exception principle" in business management enables a single administrative officer to spread his talents effectively over a maximum sphere. The capable executive, who surrounds himself with competent aides, delegates authority and responsibility to these aides to the maximum extent that is feasible under given circumstances. The executive retains for his own individual attention only those matters requiring his personal evaluation and action. The formulation of policy, selection of high level personnel, control and coordination of operations, and evaluation of results are functions that tend to demand top executive attention.

Other matters sometimes break through organization routine on an emergency basis, as "exceptions" to the normal flow of events. The effective use of budgets and reports within an organization enables busy execu-

tives to sift out significant trends and to evaluate them with expenditure of a minimum amount of time and effort. Key executives of a firm may spread their effectiveness over the maximum possible span of control through firm adherence to the "exception principle" in administration.

The shadowy "informal organization" that stands behind the formal administrative organization chart of a firm is frequently fully as significant in the actual working of the managerial system as are the relationships depicted in the formal chart itself. Our discussion of the Hawthorne experiments in chapter 11 makes it unnecessary to do more than refer to this extremely important topic at this time. Informal organization is, in many senses, the "bond" that holds the formal organization together and makes it workable in practice.

Under ordinary circumstances, a free rein should be granted to constructive informal relationships among company personnel. The development of cross-relationships that are not to be found in the formal organization chart typically evolves as a time-saving adjustment to operating realities. The complex social system that grows up within an organization also is nurtured along positive lines if individuals are allowed to retain the freedom of choice and the feeling of belonging to a cooperative group that informal organization fosters.

In times of crisis, however, it is important that the integrity of the formal administrative organization be preserved. If a sudden breakdown occurs or if disciplinary action is called for, it is important that the official who actually possesses the authority and responsibility for action step forth to render his decision. Employees should not be encouraged to by-pass their superiors, and superiors should not break through established channels of command when matters are involved that closely affect the formal organization of the firm. Staff officials should be cautioned to remember the advisory nature of their posts. Line officials should be cautioned not to abrogate their powers. If both types of officials are alerted to the true nature of the relationships that are intended within the administrative organization, they will tend to react both quickly and correctly in time of crisis. The morale of the administrative organization will be sustained at a high average level if its members are confident that the organization will exhibit strength on occasions when "the chips are down."

6. Influence of the techniques employed for arriving at decisions. Of major importance among the techniques used by business firms for arriving at decisions are those employed by the board of directors, the chief executive, and the operating management team. We shall consider the key functions of each type of official in turn.

a. *The board of directors.* The directors of a firm are elected by the stockholders to supervise the management of corporate affairs. In many instances, boards of directors are unable to fulfill their functions because of the particular pattern of stockholdings within a specific firm. If one or a few stockholders have air-tight control over a corporation, they may elect a dummy board, which is subservient to their wishes. In a great many widely-held corporations, however, the board of directors is able to perform a vital service for the firm and for the various interest groups served by the firm.

The major functions of corporate directors may be summarized as follows:

1). Directors may bring to a firm the benefits of their wide experience in the business world, particularly with respect to broad problems, such as the adjustment of an individual unit to change and progress in economic and social life. Senior directors, who are not tied down to the routine of handling day-to-day managerial duties, may use their relative freedom to advantage by reflecting upon the probable future impact of coming events upon the firm. The role that Owen D. Young played as chairman of the board for R.C.A. and for G.E. during the '20's and '30's serves as a classic example

of what a director can do to contribute to breadth of vision upon the part of the management of a firm.

2). The factors that impinge upon a firm, both externally and internally, are among the prime considerations to which directors defer when called upon to fulfill a second major task, namely, that of selecting a chief executive to lead the operating management of the firm. The wise or unwise choice of a president may, in itself, be of sufficient import to make or break a firm. The chief executive selected by the board must be able to administer a program that will be appropriate in light of all the factors that confront, and are likely to confront, a going concern. The effective president must also be a capable leader of men. He must be capable of selecting able men and of developing their potential abilities. He must be alert to the requirements of the human side of an organization. In our studies of the selections of President Harbord of R.C.A. and of President Wilson of G.E., both the inherent importance and the difficult problems of executive selection tended to come to the forefront.

3). The wide-open field for directors of a firm to play central roles in policy-formulation is now familiar to us all. Directors, as trustees of stockholder interests, have a responsibility to see that the policies adopted by a firm give adequate expression to its basic aims and objectives. Directors should be in the vanguard of those who suggest to management that reviews, both frequent and periodic, be made of existing policies, with a view to ensuring continuous adaptation to changing conditions. We devote chapter 18 to procedures involved in policy formulation.

4). Directors are legally and morally charged with a responsibility to probe into shortcomings revealed in the management of the firm. A director who studies the essential records and reports developed by management, as a point of departure for further searching questions, is a director who is properly carrying out his job. The ability to ask discerning questions and to refuse to be disarmed by plausible generalities is the distinguishing mark of a qualified board member. Upon occasion, directors may have to follow up this probing by unpleasant action, including the removal of the incumbent chief executive if the situation warrants this drastic move. Men who cannot match up to their responsibilities should not seek the post of director—or of chief executive.

b. *The chief executive.* The discussion in chapter 6 of the duties fulfilled by General Manager Baker and ex-President Wilson within the G.E. organization affords a rather detailed picture of the job of the chief executive. We may refresh our memories by referring to that chapter, thus eliminating the need for duplicating the description and analysis here. Leadership aspects of the chief executive's position are developed in section 7, below. Particular emphasis is placed upon the role of the "democratic" administrator.

c. *The operating management.* Similarly, our discussion in chapters 6 and 8–16 of the tasks confronting departmental-level management enables us to omit a detailed description of these various duties at this time. It should be noted that the great bulk of business-administration work is performed by the operating management within specific departments of the firm. The interrelationships among these officials under the leadership of top management strike to the very heart of the subject of administrative organization.

7. Influence of methods for putting decisions into effect. The chief executive and his operating-management team have the responsibility for putting into effect the decisions reached by the board of directors, the chief executive, and the operating management. Various methods that these executives use in putting decisions into effect are illustrated in chapter 4 for the R.C.A. organization and in chapter 6 for the G.E. organization. For that reason, we are now free to focus attention directly upon the use of "democratic" or of "autocratic" lead-

ership methods within the business organization.

Professor Ordway Tead of Columbia University has probed deeply into the implications of democratic administration, or the lack of it, within organizations.[5] Mr. Tead's central theme is that "in organizations with aims which get their effect in the minds and hearts of individual members . . . the way the association or institution is set up, controlled, and administered influences directly the possibility of successfully realizing the aims." Tead is not here thinking of business organizations, but the implications of his theme are not to be ignored even in the business field. Mr. Tead continues his exposition:

> To profess aims of personality growth, of spiritual enrichment, of mental enlargement, and then to carry on with an administrative machinery which is essentially controlled in all essential factors of policy and program from a small, self-perpetuating group at the top, is not merely a confusion of means and ends. It is a basic contradiction in terms which tends to weaken the whole activity of the society. . . . This new way of looking at the task of administration as improved by exercising collective responsibility carries with it a new way of looking at the role of the general executive head—in his relations with his board, with his entire staff, with his committee operations, and with his program formulation and community relations.[6]

As part of the democratic process to which our society subscribes, special group interests are bound to find expression within organizations in all fields of endeavor. Differentiation in functions and responsibilities within a sizeable organization carries with it divergencies in outlooks and interests upon the parts of the various subgroups within the organization. Mr. Tead points out that:

> . . . if the central aim and unity of drive are to be preserved there has, therefore, to be attention paid to achieving unity in the light of these diverging group points of view; for such unity of drive and intention is the end which must be sought. If the organization is to succeed in fulfilling its aims, special individual or group points of view and interests have to be subordinated to or harmonized with those of the whole body as such. Individuals have to find satisfaction and fulfillment in making the organized aim their own aim. They have to feel a genuine stake in the outcome, as affecting them. Such unity, such harmonizing, are not impossible. But neither are they spontaneous. They have to be striven for. Indeed, this is one of the major tasks of the executive leader.[7]

Mr. Tead visualizes the role of the leader within an organization in the following terms:

> [Leadership] should, in a word, galvanize the whole process of conferring and integrating diverse interests into a smooth-running experience of human relations among the individuals and groups whose efforts are being unified. . . . It means that the leader is constantly holding the main, common objective in view, so that in deliberative conferences on policy and methods someone is always bringing discussion back to the main track and toward the anticipated terminal point of agreement. . . . He it is also who will be specially concerned in the various groups where he is overseeing the coordinative process to see that the following conditions are satisfied: (1) a complete body of facts available about the matters at issue, (2) an open consideration of every different point of view before any given deliberative body; (3) the encouraging of subordination of differences in favor of unity of drive; (4) the effort to assure that indecision changes into choice and action; (5) provision for the process of acquainting the entire membership with decisions and of interpreting them persuasively; (6) the careful delegating of responsibility for carrying out decisions. . . . Experience is conclusive that unless the leader assumes these responsibilities, they are not fulfilled and the process of coordination halts and breaks down.[8]

[5] See Ordway Tead, *Democratic Administration*. New York: Association Press, 1945.
[6] *Ibid.*, page 8.
[7] *Ibid.*, pages 12–13.
[8] *Ibid.*, pages 22–23.

Ordway Tead poses the problem of democracy in administration concretely:

> . . . All these present to those concerned with the quality of the good life for all persons in a democracy, a common problem. That problem is: how shall individuals feel and know that they are real, growing, thriving persons who can call their souls their own as they plod on through the day's work? How can personality be fulfilled in and through the tasks of modern large-scale agencies—corporate or public? How, in more abstract terms, are personal freedom and economic productivity reconciled in today's society? [9]

Mr. Tead suggests that "what is needed for clarification . . . is a clearer notion of the inwardness of the democratic idea—a more radical probing of its deeper realities and implications, and a careful scrutiny of the fundamental meanings centering around the idea of administration." He continues as follows:

> We live in what we claim to be a democratic society. We operate in many walks of life through organized procedures which are administrative in character. And somehow these two big ideas have to be brought into some defensible working relation. . . . But that they have an organic working relation will be my thesis.[10]

The following definition of democratic administration culminates Mr. Tead's treatise:

> Democratic administration is thus definable as that over-all direction of an organization which assures that purposes and policies are shared in the making, that methods are understood and agreed to, that individual potentialities are being enhanced, that corporate or group ends are being realized with a maximum of release of shared creative power and a minimum of human friction. It implies further a periodic, orderly, cooperative review of total performance, of leadership in action, of effectiveness of method at every point. It brings to pass collaboration as willing, coordination as informed and continuing, personality growth as an actuality and a continuing promise. . . . Democratic administration is at once the setting, the plot, and the acting out of a drama which we are imperatively required to perform in order to give living actuality to these basic values and ends of the human enterprise.[11]

8. Influence of individual personalities in the firm. In our studies of the General Electric organization in chapter 6, we discovered that the shape of the organization itself is affected significantly by the strengths and weaknesses of management men leading the organization. The strong, dominant personality of President Gerard Swope set the pattern for the G.E. organization over an 18-year period during the '20's and '30's. Swope's personal brilliance enabled him to dominate his associates, but somehow caused him to shortcut some of the normal procedures of administrative organization. In chapter 6 the adjustment of an organization to compensate for weakness upon the part of a supervisor is also described. Production Superintendent John Evans and his predecessor both preferred to leave certain subassembly lines under decentralized control, rather than group them under a foreman with questionable supervisory capacity. Once this foreman resigned from the organization, the loose ends of the line organization were quickly pulled together under a new man.

Only under democratic supervision, in observations made by Bradford and Lippitt and in experimental research by Alex Bavelas, K. Lewin, and R. K. White, did employees satisfy their basic personal needs in the work situation.[12] The employee in a democratic situation gained a sense of "belonging" through participation in planning and decision-making, through understanding the reasons for policies and actions, and

[9] *Ibid.*, page 57.
[10] *Ibid.*, page 58.
[11] *Ibid.*, pages 71–72, 76.
[12] Leland P. Bradford and Ronald Lippitt, "How to Develop Democratic Work Teams," *The Management Leader's Manual,* page 16. New York: American Management Association, 1947.

through sharing in group credit for accomplishment. Each employee felt that his personal contribution to the group effort was truly important. Sharing in planning and in decision-making gave the employee an overall picture of group problems in a manner that contributed importantly to his feeling of security. Employees, in general, felt that they knew what lay ahead under democratic organization, and they expressed confidence that they could handle such new or emergency situations as might arise.

Democratic group leadership for an organization may be achieved by proper selection and training of leaders. The performance of such leaders upon being assigned to a new job would include the following key points:

1. "Having problems is permitted": The democratic supervisor takes steps to demonstrate that he encourages the public expression of problems in his work unit. He stimulates thinking about these problems, without becoming defensive in his reactions. He is inwardly convinced of the general superiority of group assault upon group problems. He is "one of the group," and invites continual freedom in communication of individual and group feelings.

2. "Regular time for group thinking and action": The calling of regular meetings, in preference to emergency meetings, reduces much of the tension surrounding specific problems. The provision of comfortable chairs within an adequate conference room encourages constructive thinking about group problems. The stimulation of employee reactions and suggestions during these regular meetings enhances the group feeling that these problems belong to "all of us."

3. "Democratic group meetings more than 'talk' ": Fruitful meetings are based upon a planned agenda that takes into account the interests of the participants and aims at an action outcome. The supervisor shares his responsibility for action with the group and he also shares with group members a realistic appreciation of the limitations upon his own authority or power to do anything about certain situations.

4. "Definite group goals": The democratic supervisor recognizes the importance of goals and progress toward goals as part of the democratic process. Together with the participating group, the leader defines short-run and long-run objectives or goals for group action. He also sees to it that the group acquires a feeling that progress is being made toward the achievement of these goals as the program moves forward.

5. "Performance standards mutually accepted or determined": The role to be played by performance standards is known not only by the supervisor, but also by each person who is to be judged by these standards in a democratic work situation. Charges that a particular evaluation is unfair are reduced, both in frequency and in impact upon the group, by the democratic supervisor's practice of holding a personal conference with each individual being rated.

6. "Understanding the reason for decisions outside the work unit powerfield": The role of the democratic supervisor in the communications process is a vital one. He helps his group to appreciate and accept the fact that some plans and decisions must be made outside that particular group for the best interests of the total organization. The democratic supervisor interprets the wishes of his own group to other management levels. He interprets to his particular group the announcements and directives that come from company management.

7. "Supervision of the individual as a group member": The democratic supervisor analyzes the strengths, weaknesses, needs, and contributions of every group member as an individual. In furthering the development of these individuals, however, he constantly keeps in mind the effects of his relationships with each individual upon the total group situation. For instance, strong praise for a group member who feels personally insecure, if coupled with little or no praise for a group member who suffers from egoism, may appear to other group members to be evidence of favoritism. The democratic supervisor takes action to meet the needs of such individuals, but he so shapes or frames his action as to take into account, at the same time, the needs of the total group.

8. "Progressive growth in independence and responsibility": As the newly appointed democratic supervisor carries on with his job month after month, the group with which he is working begins to mature, with respect to various elements of the democratic process. Group members acquire initiative, drive, and motiva-

tion of their own. The democratic supervisor is progressively freed from the necessity of devising short-run methods for improving group morale. He is free to plan and try out new methods and ideas for long-run improvement in group cooperation and in group productivity.[13]

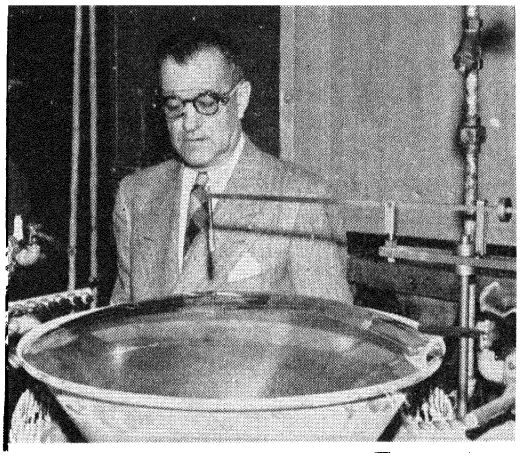
Democratic leadership usually comes into full effect as the result of a process—not through a single stroke. The democratic leader must start wherever his particular group *is* and lead it skillfully to wherever he believes that the group can go. Knowledge that the democratic pattern is being established should be shared with members of the group. If autocratic leadership had been the previous pattern, group hostilities may remain through much of a long transition period. A democratic leader will improve his prospects for success if he is able to instill within the group new aims and objectives that harmonize with the democratic pattern. Though the road to democratic relationships within an organization may be long, rough, and winding, substantial gains in group morale and in group productivity are almost invariably to be found along the way.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	338–339	Drawing from your own experience, list several situations in which group action and organization yielded results superior to what could have been achieved by the mere cumulation of independent individual efforts.
2	338–339	In what sense may organization be classified along with accounting, statistics, budgets, and reports as a "tool" of business administration?
3	339–340	Will the nature of the existing organization within a going concern play a major role in determining the future objectives and policies of that firm? Explain.
4	340–342	Illustrate the manner in which a decision to increase efficiency through the development of specialists along process, product, customer, geographic, or functional lines might increase the need for "generalists" whose responsibilities cut across the lines upon which the organizational pattern is drawn.
5	340–342	Might a decision to develop specialists along product lines entail a decision to increase the extent to which these same personnel serve as "generalists" along process, customer, geographic, and/or functional lines? Discuss.
6	342–348	When, in the nature of our society, business firms are continually encountering new and changing conditions, is it possible a) to assign authority and responsibility "in clear and unmistakable fashion," and b) to keep authority and responsibility coequal in scope? Discuss.
7	342–348	Through what mechanism does line-and-staff organization endeavor to secure the major advantages of both line organization and functional organization, while avoiding their major disadvantages?
8	347–348	Can you envisage some "highly special and temporary circumstances" under which committees might comprise virtually the entire organizational structure of a firm?

[13] *Ibid.*, pages 20–24.

QUESTION NO.	PAGE REFERENCE	QUESTION
9	347–351	Why is it that directors of business firms almost invariably adopt committee organizational procedures in carrying out their duties as board members rather than assign individual directors a) to oversee specific management activities in specific functional areas and b) to formulate policy in these areas in the name of the over-all board?
10	348–350	Might not use of a) the exception principle, b) wide delegation of authority, and c) the "informal organization" enable a general manager to supervise the heads of several dozen departments directly, thereby eliminating an intermediate managerial level? Discuss.
11	350–351	If R.C.A. were owned by a single stockholder, would any group functions remain that might usefully occupy the time of a board of directors? Discuss.
12	351–355 & Chapter 6	Do you believe that the democratic organization of administration, as defined by Ordway Tead, is a goal which can be closely approached in actual business practice? In discussing this point, refer to the management organization of G.E., as developed in chapter 6.
13	351–355	Will not a strong individualist, who consistently uses "autocratic" methods of leadership in business, accomplish results more quickly and more satisfactorily than a business executive who is wedded to the democratic ideal? Can we "afford" to use the democratic process in a competitive business organization? Discuss.
14	Chapter 17 & Chapter 8	To what extent does the *legal* form of business organization adopted influence the choice of a suitable form of *administrative* organization?



18 Administration of a Business Unit: Problem Analysis

WE HAVE OBSERVED ACTIVITIES carried on by individual departments of a business firm in chapters 9–16. We have also considered problems of legal organization in chapter 8 and problems of administrative organization in chapter 17. In this current chapter, we shall develop a method for attacking typical business problems in whatever department or combination of departments they may happen to fall.

The really significant problems of business administration are typically interdepartmental in nature. The business problems that challenge the administrative talents of the average production manager, for instance, usually affect his department in relation to other departments within the firm. What would appear, at first, to be simply a problem of setting and controlling his own production costs might, upon further examination, have wider ramifications. The more basic problem for the production manager might be to ascertain how he can keep within a certain cost range in order to give sales a fighting chance to sell the company's products once produced.

In considering alternative product designs with varying price tags attached, the production manager should know what features would be most valued by sales in marketing the product. In setting up tentative production schedules for new contract jobs, the production manager should know when sales would require delivery in order to obtain the business at all. In deciding whether or not new equipment would be justified, the production manager should know whether and to what extent future orders of this specific type are anticipated by sales. It would also be helpful to know what general price relationships and what general levels of economic activity are forecast for specific periods by the firm's business economist.

When requesting equipment to produce these goods, the production manager should know what funds will be available to his particular department to meet all of its various equipment needs during the budget period. In the event that over-all company financial considerations restrict investment of new funds in capital equipment, the pro-

Photograph at top of page: Dr. Walter R. G. Baker peers into the crystal ball (24" TV tube) to make 5-year forecast for G.E. electronics. (*General Electric Company*)

duction manager may have to improvise with existing equipment, presumably at higher out-of-pocket labor and maintenance costs, but at lower capital outlay. The production manager should be prepared to discuss this type of situation with company cost accountants.

Even if new equipment is forthcoming, the production manager might be called upon, for instance, to discuss the reasonableness of a proposed depreciation period with these accountants. He should step outside his department to ascertain the pace at which competing firms within the industry and machinery suppliers are bringing forth new product and machine-tool ideas, which will make the existing arrangement of product and machinery obsolete.

A number of other problems that are more strictly internal, with respect to the boundaries of the production department, are, nevertheless, akin to problems that might arise within other departments of the organization. This analysis is particularly valid with respect to "human" problems. In routing and scheduling work, the production manager considers a) the varying capabilities of individual members of his working force, b) their relative rates of pay, c) their relative productivity on a quantity basis, and d) their relative ability to turn out quality work. If two section supervisors within the production department have conflicting ideas or interests, the production manager has another common human problem on his hands. It differs but little in essence from that which the sales manager would have if two sales supervisors disagreed on a vital point. The same basic similarity of problem prevails in matters of promotion, transfer, and discharge of departmental personnel. Enough has now been written to indicate that the truly significant problems of administration in the production department are not essentially unlike the problems of administration arising in the sales department or in other typical departments of a firm.

Transferring our attention to the sales department, we find that the sales manager also has the problem of recommending prices that will cover production costs, as well as sales costs, and that will perhaps leave some margin for profit if the market will bear it. He should know which production costs and which sales costs are variable and which costs are fixed. He should know which costs can be reduced in the case of a specific product, and which costs must be borne if the product is to be manufactured at all. Fully as important, he should know which costs will continue, regardless of whether or not this particular product is sold, as these fixed costs can be largely disregarded, if need be, in setting competitive prices.

The sales manager should know when delivery would be physically possible in light of normal production requirements and of current conditions at the plant. In bidding for contracts or sales, it is essential that the sales manager, too, have some concept of the direction in which business activity is moving within the economy. In negotiating with other department heads in regard to product design, the sales manager must be capable of weighing the cost of particular product features against their worth as sales features. He should also weigh the cost of specific marketing-advertising methods and devices against their effectiveness in selling goods. Moreover, he should be alert to secondary effects of particular sales or of particular products upon sales at other times or upon sales of other products.

In routing and scheduling sales activities, the sales manager should consider carefully a) the varying capabilities of individual members of his selling force, b) their familiarity with particular types of problems, and c) their relative productivity, in terms of sales and of good will accruing to the company. If two officials within the sales organization have conflicting ideas or interests, the sales manager has a human problem on his hands differing but little from that encountered in production, finance, accounting, personnel, or any other department.

Rather than carry this analysis of basic similarities of administrative problems to all other line and staff departments of a business organization, we might concede the point provisionally at this time. We can then proceed to consider methods of attacking business problems in whatever field or fields of business they may happen to fall. It often happens that the determination of which areas are actually affected by a given problem is a good part of the problem itself. The really difficult decisions have a way of cropping up at the interdepartmental boundaries between and among the traditional departments of a firm. In such instances, general management, as well as departmental management, will be concerned, from the outset, with the issues involved in the specific case.

We have already observed some key problems of administrative organization in the preceding chapter. Certain fundamental problems and responsibilities of administration may be kept in mind as we focus attention upon problem-solving techniques. Three key phases of administration listed in time sequence are 1) planning, 2) executing plans, and 3) checking upon operations. These three phases of administration may be concerned with one or more of four main types of business problems, namely, 1) setting broad policies, 2) establishing an organization, 3) acquiring necessary facilities, and 4) working out performance and control techniques. Actual business problems typically overlap the four problem categories and call for use of all three phases of administration. Efforts at classification are useful, nevertheless, for purposes of problem analysis.

Long-range, intermediate, and short-range business plans must be drawn up by the business administrator for application in the major areas covered by his organization before sound decisions can be made on specific issues. The administrator should determine what particular items his firm is to sell initially and how these products are to be marketed. The entire area of sales planning is opened up in this process.

The administrator should decide what types of equipment he will secure initially to produce these and other types of products. He should also decide what types of production lines he will set up and what types of labor he will hire. The areas of production and personnel planning are opened up in this reasoning process.

The funds needed to purchase capital items and to cover material and wage needs during the course of the production cycle must be secured before production and sales can commence. The vital area of finance comes into focus at this point.

The close interrelationships that prevail among sales, production, and finance plans, on the one hand, and among short, intermediate, and long-range plans, on the other hand, will also be recognized as a vital dimension in this complex picture of business planning.

In executing his plans at the appropriate time and place, the administrator usually operates through other members of his organization who perform the detailed tasks that may be involved. Appropriate sequence and timing of moves often are fully as vital as is the correct performance of the actual task itself. The capable administrator trains his associates in correct procedure at the outset. He also directs their activities in such fashion that they will be able to do the right thing at the right time. Adequate communications, both up and down the line, must be established within the organization if appropriate plans are to be carried out.

Actual operations should be checked upon by business management to ensure that plans and directions are being followed out. The capable administrator devises techniques for controlling the operation of his organization. A good part of this task consists of simply finding out what actually is going on. Use of standard forms for periodic reports, provision for special reports, use of conferences and inspections to ascertain facts and their implications are some of the check-up devices through which necessary control may be achieved.

Turning now to the four main types of business problems listed earlier, let us spell out their nature in more detail. In setting broad policies, the administrator determines the objectives his firm will seek and establishes the general pattern of activities that will be followed in seeking to attain these objectives. Many of the plans referred to in the production, sales, and finance areas would pertain to the execution of broad policies laid down by the directors of a firm.

Once the situation has been sized up and plans have been drawn up to implement company policies with regard to existing conditions, the activities of the firm should be so organized that each member will know what his individual responsibility and authority may be in the execution of company plans. Many alternative forms of organization might reasonably be drawn up for use in a specific situation. In most instances, a clearly defined and widely understood organization plan will enable a cooperating business team to function smoothly and efficiently. Gains through the avoidance of conflict and confusion within an organization by adoption of a commonly understood organization plan will normally outweigh necessary "red tape" involved in setting up and maintaining a workable organization.

Problems pertaining to the acquisition of facilities are, of course, acute at the very outset when large sums of capital may be put up to purchase land, to build a plant, and to buy equipment and supplies needed to carry on the activities of a business. Even here, the problem varies somewhat in importance, depending upon whether a heavy or a light industry is involved.

The problem of facilities is frequently a continuing one, to a surprising extent, long after initial commitments have been made. A plant is designed and equipped at the outset for a rather specific purpose. As conditions change within the industry and within the firm, the activities of the firm tend to change correspondingly. The problem of keeping productive facilities in balance then appears as an important factor for consideration in the administrator's evolving plans. The successful administrator attempts to utilize efficiently both the material resources and the human resources at the disposal of his firm as he adjusts policies and plans to meet ever-changing situations.

Appropriate performance and control techniques are needed to ensure effective execution of policies by members of the organization operating the facilities of the concern. The types of techniques appropriate in a given case situation will, of course, depend upon a) the nature of the firm's policies, b) the ability of the personnel within the organization, and c) the circumstances under which facilities are used. A finished-goods inventory technique, for instance, would not be of great concern to an organization if the company's policy were to manufacture only "to order" a single product that had to be shipped immediately upon completion. Complex paperwork systems of production control, cost accounting, and statistical control would also be highly inappropriate in a small, special-purpose shop whose personnel consisted of a single supervisor and a half-dozen men. This same analysis might hold true for a much larger shop if its facilities were set up on a standard line basis to produce a single product.

The close interrelationships among policies, organization, facilities, and techniques may be illustrated in still another way. A policy of rapid expansion by a new firm might be utterly unrealistic if the form of organization and the capabilities of company personnel were not adequate to implement the expansion program. A rapid shift from one field of operation to another unrelated field might be unfeasible if a company had already committed its limited resources to the purchase of facilities and equipment suitable only to the existing field of operation. Emphasis upon formalized techniques that are economic only for a large-scale operation would defeat the broader purposes of control techniques if policies, organiza-

tion, and facilities were unable to keep pace with the growth of elaborate techniques.

TACKLING A POLICY CASE

Each businessman may expect to evolve his own distinctive method of tackling business-policy problems as he gains experience in this important line of endeavor. Nevertheless, an illustrative approach to problem solving may usefully be set forth here, if only to serve as a point of departure for other approaches that "feel" better to the individual being fitted in the field. Key points in this particular approach may be stated briefly as follows:

1. Read the case material rapidly for general perspective. Occasionally check or underline what appear at this stage to be highly significant points for more detailed consideration.

2. Work through the case again, looking for symptoms of trouble, those that management both spotlights and overlooks. Be particularly alert for basic weaknesses that stand out in management's actions. Cover both external and internal conditions in methodical fashion. Check over the fields of sales, production, procurement, personnel, finance, accounting, research and product development, public relations, and other pertinent activities—or inactivities—of the firm. Check the firm for attention to planning, execution of plans, and follow-up for control. Check the firm for adequacy in setting broad policies, establishing an organization to carry out policies, acquiring necessary facilities, and working out performance and control techniques. Be on the lookout for weaknesses evident in the "human" side of administration.

3. Try to probe behind surface symptoms into the real causes of troubles. For instance, in a given case, we may find that a) this year's income statement shows a net loss, b) comparison shows that the company's loss is greater than that of the industry as a whole, and c) customers complain that company salesmen frequently make delivery promises that are not kept and product performance statements that are not met.

Much of this company's difficulty seems to be internal in origin, but we do not yet know where the specific source of trouble is. We suspect either production or sales, or both, because of the delivery and performance problems. We should, therefore, seek out the causes for which these are symptoms. We may begin by asking such questions as: Were delivery promises authorized by production control? If so, why were they not kept? Were performance statements authorized by production engineering? If so, why has quality fallen off? Where has there been a breakdown in control? Is it a problem of weak top management? Is employee dissatisfaction an underlying cause? Are financial pressures forcing the company to take shortcuts? If so, do these particular short-run savings outweigh long-run losses by a clear-cut margin?

4. Focus upon the main problem areas in the case. Try to formulate the central problem that is the *key* to the analysis of the case. For instance, it may appear that demand has shifted and that the company's products and facilities are now outmoded. Is this problem the key problem, though? Whose job was it to keep abreast of demand and of methods changes? How about research and development? Have department heads fallen down or have they been blocked by top management despite their best efforts to adjust to the evolving situation? Through use of probing questions, try to break through surface-type problems to the really basic difficulty.

5. After completing the size-up of the situation and the formulation of the major problems and the key problem, set forth recommendations with appropriate supporting reasoning. Here is the point at which a written report might begin. The size-up analysis, discussed in points 1 to 4, though invaluable, should simply serve as preliminary scratch-sheet work to be used in developing an adequate basis for reasoning on the central problem and its satisfactory solution.

The first paragraph of the report should a) refer to the problem developed by the evidence, b) list major recommendations, and c) present reasoning in brief. It is well to include in this report some items that are right about the company, so as to put its problems in perspective and thereby gain the confidence of the person to whom the report is addressed. When a business analyst gives both sides of an issue before taking a definite stand, *his conclusions are strengthened, not weakened,* by his evident awareness of the total picture.

6. Plan the suggested course of action care-

fully so as to handle all of the major problems that have actually been discovered. Focus particularly upon the key problem. It is important to set up the necessary organization to carry out recommended actions. Also, pay particular attention to the sequence and timing of suggested moves, so as to do first things first and, thereby, break any potential bottlenecks. Distinguish carefully between the short run, the long run, and the in-between. Remember that a company must survive the short run in order to be on hand to enjoy the fruits of a long-run solution. This observation is particularly pertinent when financial problems are involved.

7. As we have observed earlier, an executive must "follow through" on the execution of a program, checking it for actual results through use of appropriate control techniques. He must also be of a mind to re-appraise the situation as the plan progresses. Plans and risks must be studied critically, with the passage of time, in light of ever-changing conditions.

8. In conclusion, it is well to stress that successful business administrators orient themselves in terms of present and future actions—rather than in terms of past successes. In reporting on a case situation to a busy executive, it is permissible to edge in a word of commendation for action well taken. Such an approach should not divert the reader for one instant, however, from the main task now at hand. The pay-off question in any business case may be succinctly put in five words as follows: "What action should management take?"

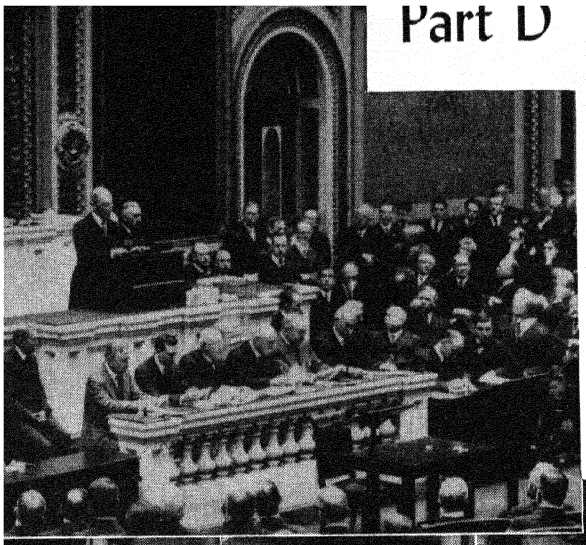
[Note: An illustrative business policy case is presented in Case Section F. A summary of the proceedings of a half-day panel discussion of this illustrative case is also included in Case Section F.]

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	357–361	To what extent do basic administrative problems of the accounting, finance, and personnel departments resemble those of the production and sales departments? Document your presentation, as appropriate, with illustrations drawn from chapters 11, 14, 15, and 17.
2	359–362	Give several illustrations of the close interrelationships existing among policies, organization, facilities, and techniques in business administration.
3	361–362 & 177–179	If you were asked to apply the 4-step training formula of tell, show, practice, and follow-up (see chapter 10) in teaching techniques of business policy problem-solving to a group of junior executives at Electronics Park, explain in detail how you would proceed.

Part D

Business and Public Policy





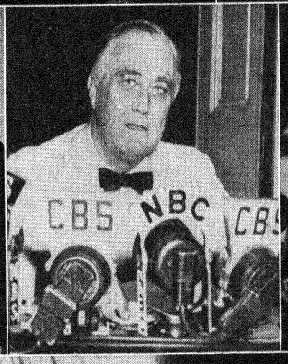




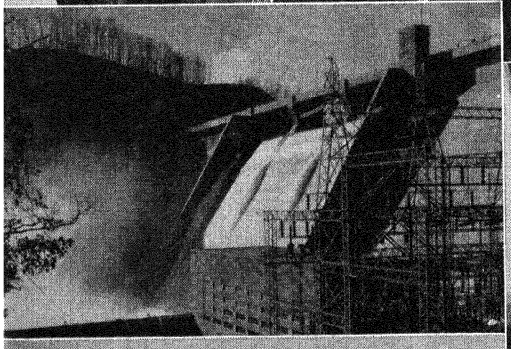




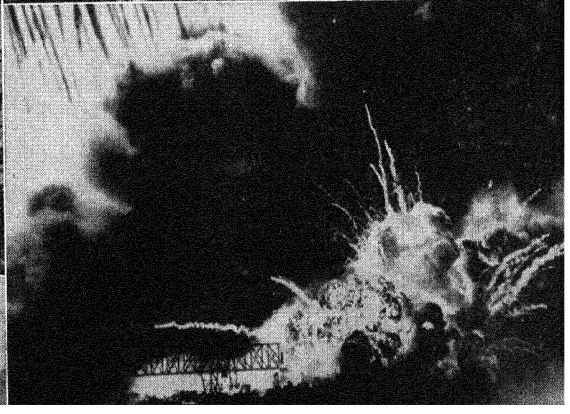












Part D. Business and Public Policy

CHAPTER		PAGE
19.	Public Relations and Social Responsibility	365
20.	Interrelations of Business and Government	377
21.	The Role of Government in Economic Life	394
	Conclusion: Some Objectives of Business	408

The three chapters comprising this section explore important questions of "Business and Public Policy." They emphasize the growing importance of the relationship between business and government and between business and society.

Description of Montage Photographs	*Courtesy*
President Wilson declares war in 1917	*Brown Brothers*
President Calvin Coolidge at work	*Brown Brothers*
President Harding at work, 1920	*Brown Brothers*
Teddy Roosevelt and campaign train crew, 1912	*Brown Brothers*
President Herbert Hoover makes radio address	*Radio Corporation of America*
Ex-Governor Alfred E. Smith and Governor Franklin D. Roosevelt confer on Democratic Party strategy in 1931	*Brown Brothers*
Ex-President Taft and President Wilson at Wilson inauguration, 1913	*Brown Brothers*
President Roosevelt delivers fireside chat	*National Broadcasting Company*
President Harry S. Truman delivers radio-TV address before 80th Congress	*Radio Corporation of America*
Spillway and powerhouse at the T.V.A.'s Norris Dam	*Brown Brothers*
Wheeler Dam project of the Tennessee Valley Authority, 1933	*Brown Brothers*
Magazine of U.S.S. *Shaw* explodes, Pearl Harbor, December 7, 1941	*Brown Brothers*



19 Public Relations and Social Responsibility

*IN CHAPTER 5, WE SET FORTH CER*tain bases of the capitalist or individual-enterprise economy. It will not be necessary to repeat the analysis at this time. Highlights of the case for individual enterprise should be fixed in mind, however, as we embark upon chapter 19. The reader may more adequately evaluate the points of view which are to be presented if he views them in broad perspective. Chapters 1–3 depicted the impressive achievements of this country under its private-enterprise system during the century elapsed since the Civil War. Individual readers will differ markedly in their evaluation of this record of change and progress as they measure it against their own personal rating norms. Chapter 17 on administrative organization culminated in an exposition of potential business progress under democratic leadership. Chapter 18 then maintained our business discussion at a suitably high level by focusing upon business-policy formulation.

The broad sweep of the commercial panorama might carry us away at this point were it not for the insistent hammering at our inner consciousness by a small group of brilliant dissenters and nonconformists. Let us, therefore, turn to the messages conveyed by two representative writers who have attacked "things as they are" in 20th-century America during recent decades.[1]

THE GREAT SOCIAL DISSENTER: VEBLEN

Thorstein Bunde Veblen (1857–1929) was an armchair economist and sociologist who probed deeply into the physiology of capitalist society, in a persistent effort to bring to the surface the ills he diagnosed in what he regarded as a somewhat moribund organism. Although Veblen's argument was frequently obscure and his writing style

Photograph at top of page: Labor and management join hands within the community to put across the Greater Community Chest Campaign in Syracuse. (*Robert G. Elliott, & Syracuse Community Chest*)

[1] Selected beliefs of Thorstein B. Veblen are presented below. The beliefs of a second social dissenter, T. K. Quinn, are presented in Case Section G.

was irritatingly repetitious, the depth and originality of his thinking won him a considerable audience during the World War I era.

Though he regarded himself as an economist, Veblen was more notably a psychologist, sociologist, anthropologist, and philosopher. He had less of a grasp of the essentials of business administration than he did of classical economics. Nevertheless, the criticisms he advanced in his writings are of first-line importance for one who seeks to understand problems of business administration in modern society.

Veblenian ideas, whatever their basis in historical fact, swayed the minds of intellectuals in his day. They represented a challenge that few business administrators were then prepared to meet. Selected concepts from a series of lectures delivered by Veblen at Amherst College in 1918, and later printed under caption of *The Vested Interests and the Common Man*,[2] are set forth below. Veblen's aim was to show how and why a discrepancy has arisen between 1) accepted 18th-century principles of law and custom that still underlie business enterprise and management today, on the one hand, and 2) the material conditions engendered by the "new order" of industry that actually developed in the 19th and 20th centuries following the "industrial revolution," on the other hand. Veblen's thesis develops as follows:

The vested right of ownership in all kinds of property has the sanction of the time-honored principles of individual self-direction, equal opportunity, free contract, security of earnings and belongings—self-help in the simple and honest meaning of the word. . . . Their definitive acceptance and stabilization in the eighteenth century are among the illustrious achievements of Western civilization. . . .[3]

Beyond all other men Adam Smith is the approved and faithful spokesman of this modern point of view in all that concerns the economic situation which it assumes as its material ground. . . . Yet the Industrial Revolution does not lie within Adam Smith's "historical present," nor does his system of doctrines make provision for any of its peculiar issues. . . . Industry is conceived to be of the nature of handicraft, not of the nature of mechanical engineering, such as it has in effect and progressively come to be since his time. . . . Business is of the nature of "petty trade" and the businessman is a "middle man". . . . The efforts of masters and workmen alike are conceived to be bent on turning out the largest and most serviceable output of goods; and prices are competitively determined by the labor-cost of the goods. . .'.[4]

A new order of things has been taking effect in the state of the industrial arts and in the material sciences. . . . Under the new order the first requisite of ordinary productive industry is no longer the workman and his manual skill, but rather the mechanical equipment and the standardized processes in which the mechanical equipment is engaged. And this latterday industrial equipment and process embodies not the manual skill, dexterity and judgment of an individual workman, but rather the accumulated technological wisdom of the community. . . . The workman has become subsidiary to the mechanical equipment. . . . At the same time these greater industries of the machine era extend their domination beyond their own immediate work, and enforce a standardization of much the same mechanical character in the community at large. . . . The resulting frame of mind is often spoken of as Materialism. . . .[5]

Today, in the large and leading industries, the place of the personal employer-owner is taken by a composite business concern which represents a combination of owners, no one of whom is individually responsible for the concern's transactions. . . . Yet the principles of the modern point of view governing this contractual relation, in current law and custom, are drawn on the assumption that wages and conditions of work are arranged for by free bargaining between man and man on a footing

[2] Thorstein B. Veblen, *The Vested Interests and the Common Man*. New York: The Viking Press, (B. W. Huebsch, Inc.), 1920.
[3] *Ibid.*, page 22.
[4] *Ibid.*, pages 26–28.
[5] *Ibid.*, pages 37–40.

of personal understanding and equal opportunity. . . . Ownership has been "denatured" by the course of events; so that it no longer carries its earlier duties and responsibilities. . . . The ordinary investor is, in effect, an anonymous pensioner on the enterprise; his relation to industry is in the nature of a liability. . . . To the common man who has taken to reckoning in terms of tangible performance, in terms of manpower and material resources, these returns on investment that rest on productive enterprise as an overhead charge are beginning to look like unearned income. . . .[6]

Industry of the modern sort—mechanical, specialized, standardized, drawn on a large scale—is highly productive. . . . So inordinately productive is the familiar new order of industry that in ordinary times it is forever in danger of running into excesses and turning out an output in excess of what the market—that is the business situation—will tolerate. There is constant danger of "overproduction." So there is commonly a large volume of manpower unemployed and an appreciable proportion of the industrial plant lying idle or half idle. . . .[7]

For the prosperity of business it is necessary to keep the output within reasonable limits; that is to say, within such limits as will serve to maintain reasonably profitable prices; that is to say, such prices as will yield the largest obtainable net return to the concerns engaged in business. . . . "Reasonable returns" means the same thing as "the largest practicable net returns." It all foots up to an application of the familiar principle of "charging what the traffic will bear. . . ." Buy cheap and sell dear. . . .[8]

Something more than one half of the net product of the country's industry goes to those persons in whom the existing state of law and custom vests a plenary power to hinder production. . . . The whole case has some analogy with the phenomena of blackmail, ransom, and any similar enterprise that aims to get something for nothing. . . .[9]

"They are all honorable men." But like other men they are creatures of habit; and their habit of mind is the outcome of experience in that class of large, responsible and remunerative business affairs that lie somewhat remote from the domain of technology, from that field where the mechanistic logic of the industrial arts has something to say. . . . Under ordinary conditions of businesslike management the habitual net production is fairly to be rated at something like one-fourth of the industrial community's productive capacity; presumably under that figure rather than over. . . . There is nothing gained by finding fault with any of this businesslike enterprise that is bent on getting something for nothing, at any cost. After all, it is safe and sane business, sound and legitimate, and carried on blamelessly within the rules of the game. . . .[10]

The industrial system does its work in terms of mechanical efficiency, not in terms of price. It should accordingly seem reasonable to expect that its control would be entrusted to men experienced in the ways and means of technology. . . . It should accordingly have seemed expedient to entrust its administration to the industrial engineers, rather than to the captains of finance. The former have to do with productive efficiency, the latter with the higgling of the market. However, by historical necessity the discretionary control in all that concerns this highly technological system of industry has come to vest in those persons who are . . . the masters of financial intrigue. . . . All the while the whole of it grows less and less manageable by business methods, and with every successive move the control exercised by the businessmen in charge grows wider, more arbitrary, and more incompatible with the common good. . . .[11]

Business is a pursuit of profits, and profits are to be had from profitable sales, and profitable sales can be made only if prices are maintained at a profitable level, and prices can be maintained only if the volume of marketable output is kept within reasonable limits, so that the paramount consideration in such business as has to do with the staple industries is a reasonable limitation of the output. "Reasonable" means "what the traffic will bear. . . ." The businessman's place in the economy of nature is to "make money," not to produce

[6] *Ibid.*, pages 43–47.
[7] *Ibid.*, page 63.
[8] *Ibid.*, pages 73–74.
[9] *Ibid.*, pages 74–76.
[10] *Ibid.*, pages 81–84.
[11] *Ibid.*, pages 89–90.

goods. The production of goods is a mechanical process, incidental to the making of money; whereas the making of money is a pecuniary operation, carried on by bargain and sale, not by mechanical appliances and powers. . . . The highest achievement in business is the nearest approach to getting something for nothing. . . . The less any given business concern can contrive to give for what it gets, the more profitable its own traffic will be. Business success means "getting the best of the bargain. . . ." Sabotage of this kind is indispensable to any large success in industrial business. . . .[12]

The great business concerns as well as the smaller ones are all bound by the limitations of the price system, which holds them to the pursuit of the profitable price, not to the pursuit of gain in terms of material goods. . . . The free income which is capitalized in the intangible assets of the vested interests goes to support the well-to-do investors, who are for this reason called the kept class, and whose keep consists in an indefinitely extensible consumption of superfluities. . . .[13]

The great distinguishing mark of the common man is that he is helpless within the rules of the game as it is played in the twentieth century under the enlightened principles of the eighteenth century. . . .[14] So it comes about that, increasingly, throughout broad classes in these industrial countries there is coming to be visible a lack of respect and affection for the vested interests, whether of business or of privilege; and it rises to the pitch of distrust and plain disallowance among those people on whom the preconceptions of the eighteenth century sit more lightly and loosely. It still is all vague and shifting. . . . But the popular feeling of incongruity and uselessness in the current run of law and custom under the rule of these timeworn preconceptions is visibly gaining ground and gathering consistency, even in so well ordered a republic as America.[15]

[Note: Selected beliefs of a second social dissenter, T. K. Quinn, are presented in Case Section G.]

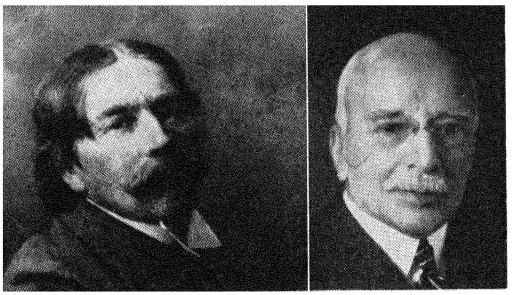


Figure 19-2: (*Left*) Thorstein Bunde Veblen (*Brown Brothers*). (*Right*) Edward A. Filene (*Lenscraft Photos, Inc., Boston*).

ADVOCATE OF CONSTRUCTIVE CAPITALISM: EDWARD A. FILENE

Edward Albert Filene (1860–1937), one of America's greatest business philosophers, was, as his friends and associates have stated, "generally recognized, even by those who disagreed with him, as an important influence not only in the economic but in the political, social and spiritual thought of the period of human history in which he lived. . . . For Mr. Filene was always looking ahead—discussing events of the day and attitudes of the day not in terms of any hypothetical 'existing situation,' but with a profound conviction that 'nothing is situated,' and all things must be judged, therefore, not according to any absolute formulas, but in their relation to the ever changing times."[16]

Edward Filene's first ambition as a boy was to keep a candy store. When he became older and found that there was "a stomach-ache in too much candy," he changed his ambition. With Edward's adolescence came an ambition "to be useful, to study, and make myself a learned man, and although I was working in a store until nine o'clock every night . . . I managed to prepare myself to enter Harvard." When

[12] *Ibid.*, pages 91–93.
[13] *Ibid.*, page 113.
[14] *Ibid.*, page 163.
[15] *Ibid.*, page 179.
[16] Edward A. Filene, *Speaking of Change*, page iii. New York: Published by Former Associates of Edward A. Filene, 1939.

young Edward's father was afflicted by heart trouble, the son had to give up his ambition to go to Harvard. Edward Filene has described how he managed to compensate for this loss of opportunity for a formal college education, as follows:

I remember my disappointment and how ill-used I felt myself to be when I could not go to Harvard. I thought that I should never now be a learned man, never be a very useful one, without this Harvard education. Instead I began to study subjects with which my work brought me into contact in a practical way—that is, subjects that would correct or amplify the theories I was applying to the problems of my business. But this was not done in schools, nor was it confined to nights, Sundays and holidays. I found myself studying daily and hourly in my store, where I considered in turn as they arose industrial and banking questions, labor relations and other similar business and economic subjects. I found that those investigations were all helping me to see the road I was travelling and the direction I ought to go. I gradually came to understand that the intelligent running of a store was a very good substitute for a college. After a while I became reconciled to my lot.

And so I have not achieved my boyhood ambitions. I have grownup ambitions now and although I have not yet achieved those either, I have gotten into a work which is a daily postgraduate course and which makes me study as hard as or harder than ever before, and which gives me the hope that even if I do not become learned before I die, I shall at least from year to year be likely to know more and perhaps be more useful. And that, I think, is an ambition which it is worth while to try to satisfy. . . .[17]

An associate of Edward Filene skillfully captured the "meaning of Edward A. Filene" in an article entitled "There Ain't No Such Person" written during 1934 while Mr. Filene was still actively carrying on his career. Selected passages of this article are presented:

The Filene influence was never greater in America than it is today; but few yet realize the extent of that influence or, in fact, just what the influence is. It is not the kind of influence exerted by a Roosevelt, for under no conditions would he ever accept any public office. Nor is it the kind exerted by Henry Ford who succeeded in abolishing the America he loved and is now preserving in a museum. Filene is, to be sure, president of a large and successful business; but the Filene store is not now radically different from many other great American department stores, and Edward A. Filene does not at present admire it overmuch. . . . Sensational innovations were adopted by which the store fairly rocketed to fame and fortune, becoming *the* largest store of its kind in the world. But these innovations, while some of them are still intact, are no longer innovations. They are features, rather, which have been adopted in time by many other most successful stores. . . .

Edward A. Filene is often hailed as a seer. He is. He probably sees more things that are hidden to the rest of us than any other business leader of our time—especially things which require immediate action. It is this quality which captivates thousands of people when they meet him first—especially serious young people who long to do great things instead of burying themselves in the world's routine. Others may counsel caution and urge them not to attempt too much; but Filene, although he is a great stickler for following facts instead of feelings, discloses facts which encourage them to even greater hope and daring. . . . He does it by talking business, in terms of changes now in progress, and unveiling for them the "better world" which must inevitably arrive when those in control of business once act upon the business facts. . . .

It is not only in the Filene store that the founder and inspirer is seemingly shelved. The same interesting phenomenon can be noted in connection with a great number of enterprises launched by Edward A. Filene. Boston has a large and thriving Chamber of Commerce. Edward A. Filene is a member, but inquiry will disclose that he is neither a prominent nor a very popular member. He was merely responsible for its reorganization along progressive lines. . . . The United States Chamber of Commerce is surely an impressive body. . . . In the 1934 annual session of the Chamber, Filene, who had something special on his mind, was not given time to speak. . . . It was his

[17] *Ibid.*, pages v–vi.

contention that the structure of business in America had undergone a number of almost revolutionary changes, and that the form of organization of the Chamber of Commerce was perhaps not well adapted to cope with the new conditions; so he wanted a committee appointed to study the present conditions, and, if it seemed advisable, to propose changes in the form of organization, to be submitted for discussion at some future meeting. . . . Everybody in charge, at least, was perfectly satisfied with the existing form of organization. It had taken years of hard work to start the Chamber in the first place—back in 1912. Two previous efforts had failed; but on the insistence of somebody, who not only gave his own time, energy and money to the task, but goaded all concerned to do the same, the job had finally been completed and the United States Chamber of Commerce became a great success. It might be admitted, to be sure, that that *somebody* was Edward A. Filene, and the Chamber, if asked, would probably erect a tablet to his memory. But Filene doesn't want tablets. He wants big jobs done. . . . Like other cosmic forces, Edward A. Filene never knows when to stop. . . .

Filene himself makes no pretense of generosity. His reason, he insists, for doing everything he does, is purely selfish. He believes in business for profit; and he is called a social idealist, he thinks, only because he is misunderstood by both social idealists and businessmen. If the social idealists had their way, he thinks, they would not only ruin business but ruin human society; whereas if business would only act upon the facts of business, and seek its profits in a truly scientific way, business would be more profitable than ever and all the things which the social idealists long for would be more than realized. . . .

Filene activities, however, while they may seem to him to be purely business activities, seem anything but that to millions of Americans. The labor unions, for instance, have found in him a "staunch and loyal friend"; but Filene has not promoted labor unionism out of sympathy for the downtrodden worker (at least, this is what he says), but because the high wages and more leisure which the unions fight for are business necessities in a country which is so increasing its production that, in the absence of more mass buying power and more leisure in which the masses may consume these products, business will surely find itself without a profitable market. . . .

Money spent on one thing, he observed, cannot be spent for another; and the family of limited means which has to pay more than necessary for medical care will almost certainly pay less than otherwise for other services and for goods offered for sale by merchants. So he studied the cost of medical care, and, through the Twentieth Century Fund, which disposes of the greater part of his annual income, cooperated in organizing the first Committee on the Cost of Medical Care. . . . He wants the doctors to organize, then, not merely to attend the sick but to keep the masses from getting sick. The family doctor, he says, working independently, cannot do this. . . . But if diagnosticians and specialists are organized in one social clinic, charging regular monthly fees for sick and well alike, the fees could be small, the service could be as good as the wealthiest now receive and the income of the average doctor would be far greater than it is. . . .

More than a quarter of a century ago, for instance, Edward A. Filene reached the conclusion that American finance must be democratized, but nobody but he knew what he meant. People either had money or they didn't. . . . One might feel sorry for those who had no money, but what could anybody do about it? And how could such cruel facts be democratized? Filene didn't feel sorry. Nevertheless, he founded the Credit Union movement in the United States; and in the credit unions, people who had almost no money and needed loans desperately, began to save their small sums collectively and to borrow from their collective selves and to pay interest to themselves on all the sums they borrowed. They had no security which the banks would recognize as security, and the laws of the various states did not recognize their unions as banks. But the experiment worked. All that was necessary, it seemed, was to change the banking laws of all the states and of the nation, and make the masses of the people acquainted with this type of cooperative credit, and then we would have a real object lesson in the democratization of finance. This has cost Edward A. Filene, all told, something over a million dollars, for which he has never either sought or received a penny in return. But don't imagine that there was anything philanthropic about it; for Filene is a selfish business man, who just happened to notice sooner than most that the prosperity of

every business depended upon the prosperity of all legitimate business, and that the prosperity of all business depended upon adequate financing of the masses who directly or indirectly make its markets. . . .

These are but a few of the Filene projects which have given this admittedly selfish millionaire a national and international reputation as a philanthropist. One might ask why, if he is selfish, does he give his money away. But Filene has an answer for that. He believes in following the facts, he says, and the facts indicate that he cannot take it with him. . . . He would rather use it, while he is alive, in doing things which simply must be done, and if there is any left over, he expects to leave most of it to the Twentieth Century Fund. He refused to call it the Filene Fund. That struck him as altogether too personal. He refused, even, to direct the Fund, which he created in 1919 to make possible the wisest use of his fortune for the common good. It was his way, rather, to assemble a body of seven directors, each of whom, including himself, should have but one vote as to how his money shall be spent. . . . The Twentieth Century Fund, to date, has mostly gone in for fact-finding, and making these facts work for the greater prosperity and happiness of all our people. . . .

His money, however, does count. It counts directly, and it gives him prestige. If he hadn't been successful, he would surely be looked upon as just another dreamer. He might suggest things, but he could hardly get much action. . . . Many a social idealist is now agitating for the elimination, or at least the curbing, of the profit motive, and the substitution of the motive of social service. Strangely, such people seem drawn to Edward A. Filene, but Filene doesn't live in their world at all. It is human nature, as he sees it, to want profits, and we might as well try to amend the laws of gravitation as to try to change human nature. All he aims at is the harnessing of the profit motive, so that more profits will roll in, and that these "more profits" will be better distributed to the masses. This means, he has discovered, that every business individually and all businesses collectively, to be most profitable, must be organized to provide the greatest possible service to the masses of the population. . . .

Edward A. Filene sees what has to be done; and if anything has to be done, there is reason to believe that it will be done. . . . It will be a better world, finer than anyone has yet dreamed of living in; but it will contain one lonely, discontented pioneer. Edward A. Filene will be disagreeably pointing to the things that still need to be done, and he won't even be invited to the celebration.[18]

In order to convey the flavor of the philosophy of Edward A. Filene in Filene's own words, excerpts are included below from one of the hundreds of addresses that Filene made at young people's gatherings during his busy career. This particular address, entitled "Youth and Our Economic Superstitions," [19] was delivered to the Tenth Annual Congress of the National Student Federation of America at the Parker House in Boston on December 29, 1934. Mr. Filene spoke, as follows:

Before I speak about "Youth and Our Economic Superstitions," I wish to say a word about two other superstitions. First: a prevailing superstition concerning youth. Second: a widespread superstition concerning superstition. . . .

The so-called younger generation, to be sure, is composed of our younger individuals. But a "generation" is a social, not an individual, term. As an individual, I grant, I have had more years than you, more individual experience behind me. Socially, however, your generation is more mature than mine. You have more social experience in your background. . . . Former generations, to be sure, handed us their mistakes. in much the same way; but you have their mistakes and ours too as data to begin with, whereas we had nothing but theirs. And let me say it is a rich legacy which we are leaving you; for I doubt that any generation in human history ever bequeathed to the next generation a richer lot of mistakes than we are handing down to you. . . .

Most of our prevailing superstitions contain some element of truth, and were doubtless useful at the time that they were formulated. It is still bad luck to walk under a ladder—if there is someone on the ladder wielding a paintbrush

[18] *Ibid.*, pages xi–xxiv.
[19] *Ibid.*, pages 66–76.

and splashing the paint. It was frequently fatal in the Boer War for British soldiers to light three cigarettes with one match; for by the time the third cigarette was lighted, the Boer sharpshooters often got their range.

Then there is the superstition of American individualism. There was some foundation for that too, although, if we wish to be very literal about it, human beings could never be human beings if they were unreservedly individualistic. To be human, they had to participate in human life, and human life has always been very largely social. . . . Nevertheless, the early settlers in America had to depend so largely for their living on what seemed to be their own unaided efforts, that they became relatively individualistic; and there was no bunk or superstition about their individualism. Nor was there anything destructive about it. It made them self-reliant. It helped to build character. . . .

But suppose there are no woods in which I can hunt game. Suppose I need a dinner as much as ever, but all I have is my theory and my gun. And suppose I try to apply the law of forest individualism to the streets of Boston. I might make a living that way for a while. Some gunmen do. But they do not develop any worth-while experience; and the more they try to apply this old formula of individualism to these new conditions, they not only become menaces to society but utterly detestable as individuals. Or suppose, instead of a gun, I own a great public utility, or an industrial or mercantile corporation. That's when this superstition of individualism gets to doing the most damage. For such things are obviously social in character, and my individual ownership of them cannot erase that fact. I am not preaching. I am simply calling attention to obvious facts. If one is operating any social mechanism, he must operate it in the light of his social responsibility or he will become a social menace. . . . It is the law of this machine age that a social mechanism must be operated to serve the community; and if we are so blinded by the superstitions of individualism that we cannot understand that law, we not only injure the community but, in the long run, destroy our chances for individual success. . . .

Your generation, I am sure, will not wish to destroy any real human values. What is good, what is applicable in individualism you will wish to preserve; but to preserve the real values of individualism, it seems to me, you will have to uproot these superstitions of individualism. . . . I know some superstitious souls who think that social planning is unlucky and that, if they engage in it, they'll surely come down with regimentation or some similar disease. As a matter of fact, if there were no social planning, we would all be regimented. If we did not develop some degree of cooperation, we would all be forced into the same mold. . . . It was by social planning that man was able to become dominant over animals which were individually far more powerful than he and far better fitted to survive. And it is only by more and more social planning that man can conquer those forces which drive nations to war when they do not want to fight, and keep individuals in a desperate struggle for existence although they have a machine in their hands abundantly able to provide economic security for all.

Youth is often told, I know, that its aspirations are impractical, and that wisdom consists of concentrating as soon as possible on the stern business of making a living. Well, there was some sense in that—once. But that was in the days before the machine age, when, if one did not give the bulk of his time and energy to making a living, he ceased to live and incidentally ceased to aspire. If we examine the facts of the machine age, however, instead of taking this ancient talk too seriously, we shall see that the machine age makes it possible for the masses everywhere to get an abundant living, without devoting the bulk of their time and energy to the task. For the first time in human history, then, the so-called younger generation may now actually achieve the liberty to live in full harmony with human aspiration. . . . If you want real liberty in this machine age, you've got to operate the machine according to the facts of this machine age; which means it is necessary not only to discover the facts, but to train the mind to respond to facts instead of to the fears which are nurtured by superstition. . . .

I do not know, and do not much care, whether you are radical, liberal or conservative. But I know that you are younger than we, with all the fire of youth, and yet that *you are a later and therefore socially more mature generation.* In that lies our promise of a better world. That fact, it seems to me, is the very foundation of our faith in human progress. Because of that, we were able to find our way out of the dark ages, with their ignorance and their cruelty. It was not that the people of any

generation did or could become wholly enlightened, but that the succeeding generation carried on. . . . You will understand that nobody, not even your professors, can be wise enough to tell you *what* to think; and that what we need for human progress is to learn *how* to think—how to free ourselves more and more from the spell of worn-out formulas and how to find the truth and to follow it. But this, instead of decreasing your faith in humanity, will only strengthen it. For you will know that *all* the great achievements were accomplished not by perfect supermen but by faulty human beings, with the cooperation of other faulty human beings.

You will want to be successful, no doubt. But, freed as you are from so many social superstitions, you will understand that success does not come from power *over* our fellow men but with power *with* our fellow men. You will not, then, be forever trying to get something for nothing, either as a ticket holder in the sweepstakes or a stockholder in some corporation which is over-charging the public. As you study the facts of the machine age, I am convinced you will see that it cannot rest on gambling and speculation but that it must be founded on the principle of human service. . . .

You will not tolerate a social order with so many economic corpses lying around. You will bury the dead and turn to the building of a better world in which there will be no profits except the earned profits that come from real service and no privilege except the privilege of participation in the upward march of human life. I am not thinking of any Utopia or any Perfect State. Nor am I thinking of ultimate reality. I am thinking of the upward struggle through and beyond our superstitions and an ever nearer and nearer approach to Truth.[20]

[Note: Selected views of a second constructive business leader, Owen D. Young, are presented in Case Section G.]

PUBLIC RELATIONS IN BUSINESS

The fact that men like Veblen and Quinn can apparently get across their message much more readily than men like Filene and Young has long been a source of concern for forward-looking businessmen. In the period just prior to World War II, as New Deal candidates made business pay again and again at the polls for past excesses, the concept of public relations struck home to the hearts of a whole generation of businessmen. Public relations became the by-word of that period, just as human relations has become the by-word at midcentury.

In many instances, public relations was conceived to be entirely the work of the tried-and-true press agent whose essential task was to put across the desired image "if a new business leader was to be created or if a leader already too well known was to be deodorized." [21]

The editors of *Fortune* importuned businessmen to delete from the true concept of public relations the grandstand acts of press agents and the disguised efforts of businesses to promote the sale of their own products. They asked businessmen to restrict public relations to "the conduct of individual businesses as organizations of people banded together in an effort to make a living for themselves and a profit for investors." [22] A cleavage in public thinking was seen to call for a public-relations policy, as distinct from the normal needs of good business. The *Fortune* editors pointed out that "the man on the street quite obviously thinks one way as a customer and another way as a citizen." They stated that "it is not enough that a business should offer him its product at a reasonable price. Business must also satisfy him that it is fulfilling what he regards as its social obligations. . . . The net of it is that business organizations have a political as well as an economic being. Public relations is the name business gives to its recognition of itself as a political entity." [23]

[20] *Ibid.*, pages 66–76.

[21] *Fortune*, Volume XIX, No. 3, March 1939, page 83. (Copyright by Time, Inc.) "The Public Is Not Damned."

[22] *Ibid.*, page 85.

[23] *Ibid.*, pages 85–86.

For a long time, such business organizations as G.E. relied almost entirely upon a constant stream of "technological news stories" that reflected credit upon their research organizations, as their sole public-relations activities. These news stories were effectively written, and were, in the main, suitably noncommercial in their immediate application. Nevertheless, they were not sufficient in and of themselves to get "the case for business" across. A more direct approach involving business "education" or "propaganda," at the reader's option, was instituted by the National Association of Manufacturers, which organization declared itself to the public to serve as the "spokesman" for business. Such themes as "Two Billion People *Envy* You" and "What Is Good for Industry Is Good for You" were unleashed upon a somewhat sales-resistant public.[24]

The public-relations efforts of business interests during the pre-World War II period failed overly to impress the editors of *Fortune* or the general public. The former classified a great deal of the product as "poor propaganda . . . persuasive to few except its sponsors." Other public relations efforts qualified as "good propaganda" in that they dealt with issues in which the public was interested and illuminated them with new and creditable facts. The efforts of G.E. were placed within this category.

The importance of *inquiry* into the public mind in order to discover just what the points are on which the public wishes to be informed was also stressed. *Action* by management to establish as hard realities within industrial plants and commercial shops the virtues that the public is coming to expect is another "must" in a public-relations program. A more positive type of action, actual leadership in setting public policy in the business sphere, is also requisite if business is to play an adequate role in modern society.[25]

Reviewing the field of public relations in business a decade later, the *Fortune* editors asked the pertinent question "Is Anybody Listening?"[26] They contrasted the "golden age" of business productivity in America at midcentury with the generally low repute in which business leadership is held by great segments of the general public. The *Fortune* editors stated the challenge as follows:

> Never before has the businessman had so much paraphernalia with which to communicate to those about him, and never before has he spent so much time using it. And more and more, as he looks about him, he is coming to wonder. . . . Is anybody really listening? He gets up a report about his business and if it's simple he is accused of talking down to people, if it isn't he is accused of talking over their heads. He spends thousands to inform people that the company's profits are 7.2 per cent only to discover when his pollsters query them later that they think he made 50 per cent. He puts on a big community-relations splurge and finds that the townspeople think a lot better of a firm that didn't do anything. Whatever the medium, the more he tries to communicate, the more he can conclude that management and the people it tries to reach are groups separated by the same language. . . . Not since the early thirties has business been so troubled by the gap between it and the rest of our society.[27]

This self-indictment by business leaders represents "wonderful" news to *Fortune's* editors for it indicates that business leadership is at last *aware* of the existence of a serious problem of "communications." The editors of *Fortune* lash out against "the one great block" that stands in the way of genuine progress in communications about business. This block is identified as the "great cliché" that "business has been outsold" or that "free enterprise needs a

[24] *Ibid.*, pages 111–112.
[25] *Ibid.*, page 114.
[26] *Fortune*, Volume XLII, No. 3, September 1950, page 77. (Copyright by Time, Inc.) "Is Anybody Listening?"
[27] *Ibid.*, page 77.

soapbox, too." The whole free-enterprise campaign to "re-educate Americans in the American way of life" is, in the words of the *Fortune* evaluators, "not worth a damn." Their candid opinion is backed up by polls, not of antibusiness groups and the general public alone, but of business executives themselves. The campaign is widely regarded as having "debauched and exploited the symbols that bind us." [28]

The fundamental error in this "sell American enterprise" campaign, as analyzed by *Fortune's* editors, was the fact that it overlooked the importance of "context." The power of context—the importance of congeniality between speaker and audience—was dramatized in the following *Fortune* experiment:

> A cartoon chart of "The Four Goals of Labor" was clipped from a C.I.O. newspaper and photostated. A new legend, however, was attached at the bottom: "From June 3 N.A.M. Newsletter." Twenty C.I.O. members were then shown the ad and asked if they thought it was a fair presentation of labor's goals. Four grudgingly said it was and two couldn't make up their minds. The remaining fourteen damned it as "patronizing," "loaded," "paternalistic," "makes me want to spit. . . ." [29]

The *Fortune* editors' conclusions are simply stated:

> 1. Only with trust can there be any real communication, and until that trust is achieved the techniques and gadgetry of communication are so much waste effort. Study after study has pointed to the same moral: before employees will accept management "facts," they must first have over-all confidence in the motives and sincerity of management. And, obversely, those companies whose day-in-day-out actions have made for that confidence are precisely those companies that need to worry least over techniques. "Once confidence exists," says Armstrong Cork's Keith Powlison in the *Harvard Business Review*, "all explanations can be relatively simple and brief. It will not matter much then that there are many employees who will never really be able to understand financial statements and will never really have any interest in their details. As long as they have confidence in the management, they will be satisfied that all is well." . . .
>
> 2. This brings us to an apparent paradox. If a company's efforts to communicate fail because it has not communicated in the past, then how are you to break out of this circle? Why do so many of our plans not work? . . . "If the people around you are spiteful and callous and will not hear you," wrote Dostoevski in 1880 in *The Brothers Karamazov*, "fall down before them and beg their forgiveness, for in truth you are to blame for their not wanting to hear you." The counsel . . . is still good.
>
> 3. The prime obstacle to the confidence the businessman must enjoy if he is to be believed is the prime obstacle of every form of communications. It is, simply, the fact of difference . . . the great gap is the gap in background, experience, and motivations between ourselves and those with whom we would communicate. It is a gap that will remain. . . . But if we cannot close the gap, we must at least *acknowledge* it. For this acknowledgment of difference is the vital preface to all the efforts that follow. . . .
>
> 4. Theoretically, management should be able to learn a few lessons from its salesmen on this. One of the first things they learn is the absolute necessity of finding out what's really on the minds of their customers. . . . More than he talks, the good salesman listens. And like everyone else who listens, he induces a catharsis that is often quite as important as what is being listened to. For the sheer act of listening may itself be far more persuasive than anything we might have to say—and there is the strong possibility that we might also learn something we didn't know before. . . .
>
> 5. Today the production line has, to a large extent, replaced this self-expression with frustration. . . . "This problem," says Pitney-Bowes's Walter Wheeler, "is an outgrowth of a conflict too few of us recognize . . . a conflict between the freedom of expression which all citizens enjoy in their private and political life, and the relatively autocratic life which we find in industry. . . . This is the old problem of leadership in a democratic society. . . . [It is] simply, how do we go about directing ever

[28] *Ibid.*, page 78.
[29] *Ibid.*, page 82.

greater numbers of people in such a way that they will accept our direction and not undermine it?" How? The answer is plain: through *participation*. . . . Where the basic principle has been followed, where management has *wanted* the participation of the worker, the results can almost be called exciting . . . in every case there has flowed a strong and lubricating confidence. . . . Let us note, however, that though the principle is plain enough, there is nothing simple whatsoever about its application. . . .

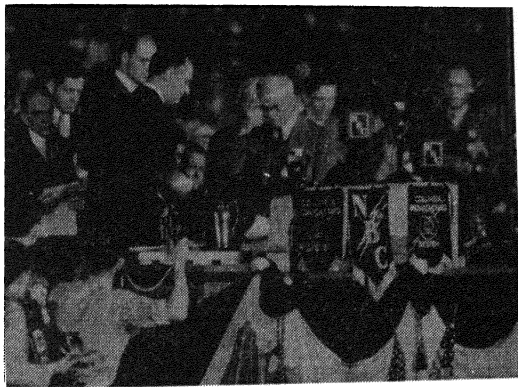
6. And is not participation at the bottom of businessmen's great new preoccupation with communication? The businessman used to get satisfaction out of being the man on the hill, the patron of the arts, the payer of the church mortgage—and did not everyone agree that it was right and proper that he be entrusted with the destiny of the country? Now, satirized in countless novels, politically a prophet without honor, he is stripped of the former dignities and of much of the old feeling of moral contribution. But in his groping for a new status he has begun to seek something very admirable —a renewed sense of participation for his employees. True to the old rationale of business, he explains it in terms of self-interest—and indeed, in increased productivity and such material factors, it is to his self-interest. But is it not perhaps that what he has really been after is a sense of participation *for himself?*" [30]

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	365–368	Acting as Veblen's "political advisor," draw up a succinct political platform that would effectively implement the economic philosophy of Thorstein Veblen in the event that he were elected to the presidency. Include any major reform measures that are suggested by Veblenian writings.
2	368–373	Acting as Filene's "political advisor," draw up a succinct political platform that would effectively implement the economic philosophy of Edward Filene in the event that he were elected to the presidency.
3	365–373	Compare and contrast the economic philosophies of Thorstein Veblen and Edward Filene.
4	Case Section G	In your opinion, might situations arise in which the directors of large corporations, such as General Electric and General Motors, may decide as a positive policy *not* to seek to expand the firm's individual share of a given product market beyond a percentage mark consciously selected by the directors as being the largest share that is compatible with the long-run interests of the American private-enterprise system? Explain.
5	373–376	Explain your own personal concept of the role that should be played by public relations with respect to the individual firm and with respect to business as a whole.

[30] *Ibid.*, pages 82–83, 176, 178.

20 Inter-relations of Business and Government



THE GREAT CHANGES THAT HAVE occurred in the business scene during the century following the Civil War have brought a general realization that "private" business is, in fact, subjected to a large and increasing amount of social control.[1] The central agency through which this control is exercised is the government. Important questions at once arise concerning social control of business by government. What, for instance, is social control? What particular government exercises this control in specific situations?

SOCIAL CONTROL OF ECONOMIC ACTIVITY

Social control of economic activity is control, with coercion if need be, exercised by or on behalf of the aggregate of individuals and groups forming our society. In the current stage of world development, our concept of society uses the nation as its basic unit, although it is clear that the real economic interests of particular groups within a national society increasingly transcend national boundaries.

Photograph at top of page: Governor Franklin Delano Roosevelt accepts the Democratic nomination at Chicago in 1932, calling for a "new deal" with increased social control of economic activity. (*Brown Brothers*)

The government of a nation is not the only group that contributes to social control of economic activities. A degree of group control is exercised over group members as well by other economic and social organizations, such as the trade association, the labor union, the business service club, the church, and the press. Nevertheless, the government is the principal agency through which effective social control is exercised.

The control or coercion exerted by a government is "social" in nature only to the extent that the government itself is truly representative of the various interests and groups being governed. The government of a nation is necessarily less comprehensive than the society that it represents. In a given situation, the specific government officials who act are also less representative of society than are the abstractions known as the nation and as the government. The agent of the state is, upon analysis, an individual or group of individuals with per-

[1] For an outstanding treatment of this central concept see John M. Clark, *Social Control of Business.* New York: McGraw-Hill, 1939.

sonal interests, prejudices, and feelings, as well as with a formal role to fulfill as the representative of the people.

The statutes that an administrative representative of the government must enforce and execute are not themselves perfect reflections of the will of society. At the local, state, and national levels, laws are carved out by a process of give and take, involving compromise and concession. Partial concessions are characteristically made to strongly entrenched interests so that the legislative measure can be passed, rather than rejected outright. In order to save some laws that are regarded as highly desirable, the representatives of the people frequently find themselves acquiescing to passage of other laws that operate more or less directly at the expense of society as a whole. Individual members of the executive agencies of the governmental unit that administers a law may be lukewarm concerning, or even personally opposed to, all or part of a given statute. Enforcement of the law as actually written may or may not suffer significantly under these circumstances. If the major groups among the governed are also out of sympathy with a particular statute, the law may become a "dead letter" buried within the statute books. The fundamental law established by the Eighteenth Amendment (Prohibition) and enforced by the Volstead Act fell increasingly into this category as the years passed by.

The legal rules of business, which are set by common law and by statute law, are designed to guide economic activities along lines beneficial to society as a whole. Undoubtedly this is a fair statement of objectives from a long-run point of view. In the short run, however, an individual player of the game may find that the existing rules do not adequately protect him as an individual when he is confronted by a new and strikingly different situation. He may find that the law bears down upon him and holds him back from the accomplishment of what he conceives to be in the true interests of society, as well as in his own self-interest. The law is an evolving body of concepts. It is continually adapting to change. If a large number of individuals appears to be unfairly treated by "things as they are," the law itself, as well as the practices of these individuals, may undergo significant change.

We noted earlier, in chapter 5, some basic concepts underlying the capitalistic or individual enterprise form of economic organization. The law is the main avenue for the preservation and further development of these concepts. Included in these legal bases of capitalism are 1) personal security, 2) private property, 3) freedom of individual initiative, 4) the preservation of competition, and 5) the enforcement of contracts. The privilege of incorporation might well be added as a sixth legal institution underlying modern economic life.

In our democratic, private-enterprise society, a great many of the controls exercised by government are negative in the sense that they tell people what they may not do, rather than dictate what they must do. The obligations that the government imposes also tend to be those that good citizens would adhere to voluntarily, even if there were no specific law on the subject.

The decisions of the government concerning new case instances tend to be predictable, in the main, from decisions on past instances in which many of the same considerations were also present. The importance of precedents and informal customs as stabilizing influences in democratic society is worthy of stress, as we should soon learn if we were suddenly to be deprived of their presence. The positive requirements that the democratic state imposes upon its citizens are normally restricted to those widely accepted as "natural," or to those to which the individual has earlier consented, as, for example, to the honoring of the terms of a contract.

The representatives of society who form the government have an inordinately difficult task in defining and adhering to the requirements for beneficial social control. Initially, there is the problem of defining the objective of control in particular instances in which clashes of specific interests

are almost always present. The manner in which the control is to be applied and enforced is also a matter of great moment. The basic structure of the society may be rent if the will of a fleeting majority is imposed, through the application of harsh enforcement measures, upon a fiercely resisting minority. The role of the government administrator in exercising judgment during the handling of such a situation is a key one in our form of society. Of even greater fundamental importance is the task of the common citizen who must select the representatives to act for him in the guidance of society and in the social control of economic activities.

GOVERNMENTAL FRAMEWORK

The question of "Which government?" is a particularly pertinent query in the United States. U. S. governments are periodically changed, although they are not as volatile as are French governments, for instance. The latter unit falls each time that a shift in coalition parties in the legislative branch destroys the parliamentary majority on which a particular cabinet's tenure is based. In the United States, we have had sufficient turnover in governments on stated polling days, however, to keep our two-party system alive and vigorous.

The question of "Which government?" pertains to levels of government, as well as to particular political administrations. In our federal system, political power is divided among three principal levels of government, namely, the government of the United States, the governments of the 48 states, and the government of local political subdivisions of states. These local governments may have jurisdiction over a county, a city, a borough, a township, or some other subdivision authorized by the state.

The Constitution of the United States, in 1789, reserved to the states all powers not expressly delegated to the Federal government or not reasonably necessary and proper to carry into execution other granted powers. The gradual and continuing shift in the locus of power from the individual states to the Federal government since the Civil War period is one of the dominant political developments of our era. The force of events—in which the great Industrial Revolution has played a lead role—has pushed more and more segments of our social and economic life into the political arena and has endowed these segments with a national, as well as a local or regional, political significance.

For example, Article 1, Section 8 of the United States Constitution grants to the Federal government the power to execute treaties, to conduct foreign relations, to tax, to provide for defense and the general welfare, and to regulate commerce among the several states. The growth and development of this nation from 1789 to date is paralleled by the expansion of Article 1, Section 8 of the Constitution of 1789 to provide for government activity with respect to the tremendously complex problems of modern social and economic life. Under the Commerce Clause, which is Clause 3 of Article 1, Section 8, have come laws to regulate all movement of commerce across state lines, whatever the mode of transportation used. All forms of communication, including radio and TV, are forms of commerce, and are, for the most part, interstate in character. The powers granted under the commerce clause have been construed by the courts to "keep pace with the progress of the country, and adapt themselves to the new developments of time and circumstances. . . . They were intended for the government of the business to which they relate, at all times and under all circumstances." [2]

The right to "regulate" commerce has been construed as including the power to "prohibit" commerce. The Supreme Court observed that to regulate was to limit and restrict in some way and held that prohibi-

[2] Pensacola Telegraph Company *versus* Western Union Telegraph Company, 96 US 1 (1877).

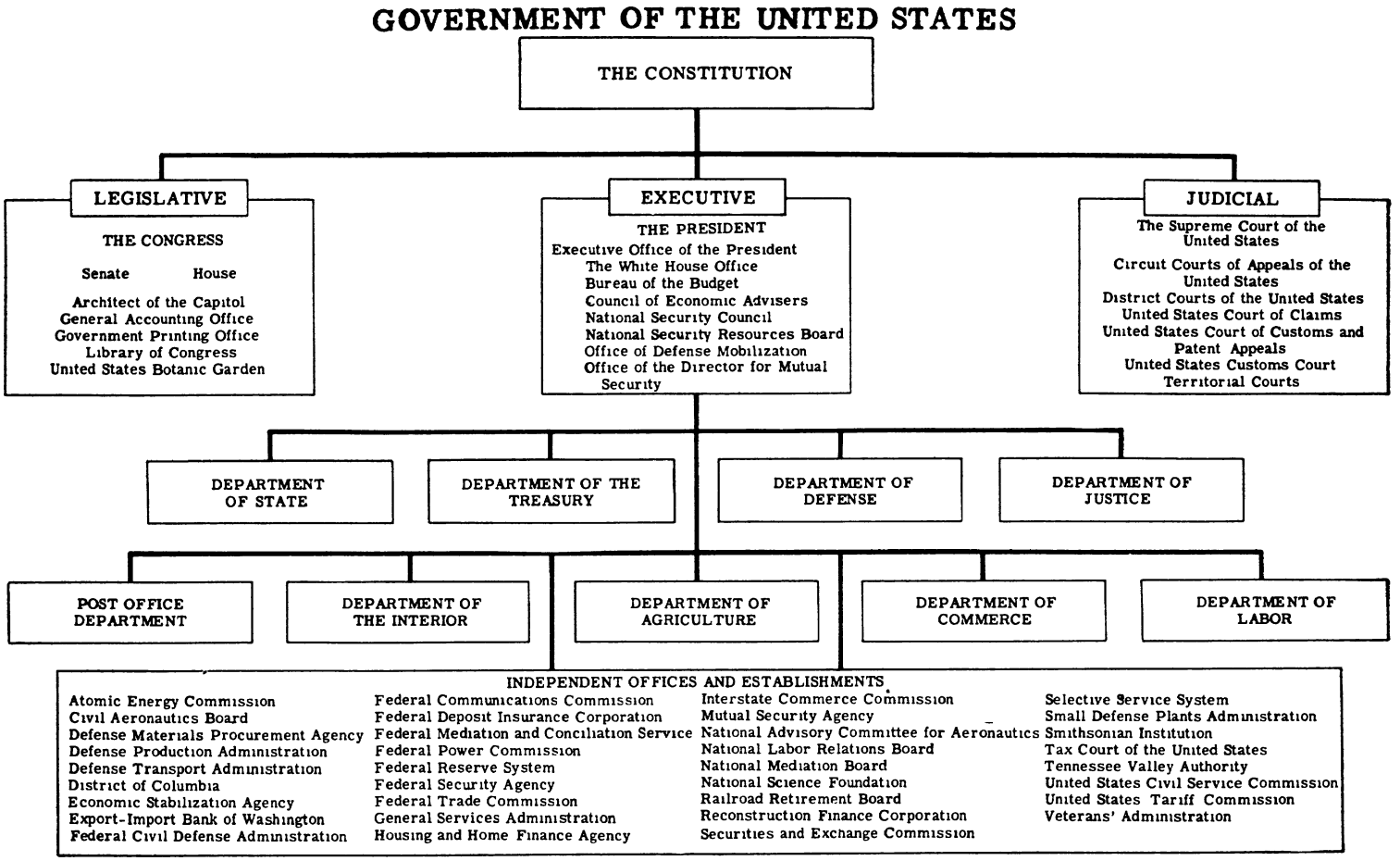


Figure 20–2: Chart showing the more important agencies of the Government of the United States (*General Services Administration*)

tion was merely the maximum limitation or restriction.[3] This court interpretation enabled Congress to exercise its commerce power to promote the health, safety, morals, and general welfare of the people, although the police power, as such, is reserved to the states under the Tenth Amendment. Under another broad interpretation by the courts, the production of goods that are later to be shipped in interstate commerce, has also been construed as falling within the scope of the interstate commerce clause. The constitutional sphere of the Federal government has been enlarged by court interpretation to include the regulation of business combinations, business practices, production, labor, agriculture, transportation carriers, and communication, as well as the commodities that actually move physically in interstate commerce.

INTERGOVERNMENTAL RELATIONS

The existence of three major levels of government within the United States raises, as a central problem, the question of intergovernmental relationships. We shall devote some attention to this concept in the belief that its implications are, to some degree, transferable to problems of relationships between business units and governmental units at the local, state, and national levels. Professor William Anderson of the University of Minnesota, who directed a 5-year research project on the "Intergovernmental Relations of Minnesota" under the auspices of the Rockefeller Foundation and the University, evolved a refreshing new view of intergovernmental relations by study of operating relations in the performance of public functions. Anderson's approach may be summarized as follows:

In considering the question, "What are intergovernmental relations?", Anderson finds that the most nearly comparable term is international relations. International relations to many persons means "the relations of . . . nation-state with nation-state in the so-called 'family of nations,'" and the picture is one of "great, abstract entities, whole nations, acting upon or in relation to each other. . . . Closely examined, however, nations are found not to act with complete internal unanimity. . . . What happens is that leaders, rulers, foreign ministers, diplomats . . . businessmen and missionaries, deal with each other and with other people across international boundaries. . . . The relations are inter-personal relations, human relations, to a very considerable extent even in the international field. . . ." [4]

In intergovernmental relations, too, Anderson found that the traditional idea seems to be, in part, that of entire governmental units acting upon and having dealings with other entire governmental units. In the fields of law, politics, and military action, the "reality" of these separate governmental units stands most clearly revealed, for the usual histories reinforce this view.

Connected with this idea of units, Anderson found another one in which the stakes of intergovernmental relations are viewed as "certain claims to rights, power, land, and wealth as the prime elements of governmental policy." He found that the implications of this view lead to an "exaggerated emphasis upon rights, state sovereignty, and the separate identity of each state." At a lower level, this view emphasizes "municipal home rule" and fights against state interference in municipal affairs, stressing throughout not community of interests but opposition of interest, uncooperativeness, and even isolation.[5]

Anderson has noted that this general attitude of suspicion toward intergovernmental cooperation coincided with an era of laissez faire in government. During this period, the prevailing opinion was against any increases in governmental activity and was

[3] Ronald A. Anderson, *Government Regulation of Business*, pages 98–99. Cincinnati: South-Western Publishing Company, 1950.

[4] William Anderson, *Some Trends in Federalism and Intergovernmental Relations* (mimeographed), March 1949, page 2.

[5] *Ibid.*, page 3.

even against making governments more efficient in what they were already doing. Changes in thought, increases in population, industrialization, urbanization, the raising of standards of living, education, the press, radio, and other means of communication, and the steady advance toward a "national social consciousness"—all these factors are listed by Anderson as having relationship to the changes in political ideas that have taken place.

The change now puts "advancement of human welfare" as the first objective of government, both in the national and in the international field. According to Anderson, the important words now are "function, efficiency, public service, human welfare," not "power, state rights, independence, sovereignty." It follows that there is, at the same time, less of the old suspicion against the growth of governmental activity to the extent that this concept of government as a human welfare institution, made up of human beings and operating for the human welfare, is on the ascendant.[6]

Human welfare is achieved by a wide variety of public services or functions, Anderson observes. The emphasis has shifted toward the functional, with the function to be performed receiving more attention than the geographical unit with its rights and powers. This is especially true, because the typical function is not confined to one area or one unit of government, but calls for participation at all levels in a common endeavor.

Moreover, once a new function has been developed and the principal questions of policy and method are well established, the function gravitates more and more to the administrative branches of government, coming to rest in the particular network of agencies, national, state, and local, that provide the specific services. In his research project, Anderson found that, within each such group handling a function of government, there soon develops an *esprit de corps* and a concern for good results in performing the function that cuts across geographical boundaries. The function, not the unit of government, becomes the main concern.

Intrafunctional group loyalty tends to gain the ascendancy over loyalty to a particular entire unit of government, such as the city, county, or state. In many fields, this intrafunctional unity is reinforced by the clientele served. The clientele builds up a pressure group for the service desired. It attempts to protect the autonomy and financial support of the function at issue.[7]

Anderson believes that to a considerable extent the study of intergovernmental relations must now consist of a comparison of the competition between, and influences upon each other of, the old and the new approaches. Prior to such studies, however, must come a thorough examination of the new functional and administrative relations in fields of cooperative national-state-local activity in which men and women of each group learn to adjust intergovernmental relations by the human process of working together to a common end. For it is human beings who act and interact, not entire units of government. Their actions take place with reference to single functions of government.[8]

The problem of visualizing the field of intergovernmental relations thus shapes up, in good part, as that of getting on the inside of these various functional units to observe how men have developed their functional and personal relations and have built up support to protect the function against interference by the general political authorities of the states. In such studies, Anderson finds that attention should be given to the human factors that influence and help to determine the relations developed. Thus, the degree of professional training, the former experiences in adminis-

[6] *Ibid.*, page 5.
[7] *Ibid.*, page 6.
[8] *Ibid.*, page 6.

tration, the political preferences, the personalities, the tenure, and the methods of the leaders and workers in the particular function all need to be considered.

Moreover, careful examination must be made of the manifestations of human relations between the generalists and the specialists, between the geographical area and the functional interests, between the political leaders and the administrators, between the pressure-group clientele and the other parties at interest. In the working out of these new relations, Anderson sees foreshadowed "a system of federalism that is profoundly different from that of even fifty years ago." [9]

RELATIONS OF BUSINESS AND GOVERNMENT

The theory of intergovernmental relations worked out by Professor Anderson in his Minnesota studies has important implications for the relations of business units and governmental units at the local, state, and national levels. As in international and in intergovernmental relations, the commonly held picture in business and governmental relations is one of "great, abstract entities" acting upon and in relation to each other. In sharp contrast with this stereotyped picture, the reality in all three instances is that relations are interpersonal, or human, relations. Instead of stressing the so-called "prerogatives" of private enterprise and playing up an assumed opposition of interest of business and government, persons holding an enlightened view of the respective "roles" of business and of government in our democracy develop more positive working concepts. Advancement of human welfare is the common, long-run objective of both business and government. "Function, efficiency, public service, and human welfare" are equally descriptive of business and of government in our society if the long view is taken. Business administrators, by their business actions, enable the government to perform its role of furthering the general welfare, just as government administrators, by their governmental actions, make it possible for business to perform its role of producing the goods and services needed in modern economic and social life.

In a great majority of cases, the interrelations of businessmen and government men are positive and constructive, even cordial. Through repeated contacts concerning specific functions and problems, individual business administrators and individual government administrators come to know and respect each other's point of view. They become aware of the actual problems that set limits to the effectiveness of the operations carried on by each unit, whether business or governmental. They come to appreciate the nature of relationships existing between business unit and business unit and between governmental unit and governmental unit, as well as between business unit and governmental unit.

Moreover, once a functional relationship between business unit and governmental unit has been developed, and the principal questions of policy and procedure are well established, the relationship becomes more and more administrative in character. Contacts between specific business and governmental units, with respect to particular functional situations, become a settled part of the job content of specific administrative positions within the business organization and within the governmental organization.

The successful handling of new problem situations as they arise becomes the main concern. The hostility that the layman might presume exists between the representatives of great rival organizations is notably absent in a vast majority of the myriad business-and-government contacts occurring in our economy from day to day. In fact, aside from a few conflict situations, which are understandably dramatized in the press, the business administrator tends to assume that he is a customer or a client

[9] *Ibid.*, page 7.

of the particular governmental service agency with which he has his dealings. Business and governmental administrators learn to adjust their business-and-governmental relations by the human process of working together to a common end—the mutually satisfactory solution to a single functional problem. It is human beings who act and interact, not entire units of business and of government.

In an over-all sense, the quantity of contacts to be made between business units and governmental units is important. The respective roles of business and of government within our mixed, private-enterprise economy are shaped by the total impact of government on business and of business on government. We shall discuss this matter in the "freedom and planning" section which brings this chapter to a close.

With regard to any given functional contact of business and government, however the principal interest of society is not one of reconciling conflicting views as to the respective sphere for business and for government. The public interest in individual business-and-governmental contacts is in seeing to it that the individual administrators are well qualified to handle their respective jobs within business and governmental units. The careful selection and training of administrators and the development of appropriate methods and procedures to be followed in business-and-governmental contacts will go a long way toward ensuring that the general welfare will be served through the outcome of these business-and-governmental relations.

GOVERNMENT AIDS TO BUSINESS

The role of government in our economy is to be measured in terms of aids afforded by government to business enterprise, as well as in terms of restrictions imposed by government. Over the course of our development as a nation, the aids afforded by government to business have grown significantly in quantity, as well as in importance.

From the outset, the local, state, and Federal governments have provided a number of services that were not regarded as being well adapted to private operation. Prominent in this list of services are police protection, postal service, and other such public-utility services. Prominent also are legislative measures designed to aid business through enforcement of patent rights and copyrights. Various protective tariffs enacted over the years were designed to help businessmen in specific industries to compete on advantageous terms with imported goods for the domestic market. Whether such tariffs helped or harmed the American economy as a whole, it is nonetheless true that they were *intended* to be aids to domestic business.

In recent decades, the scope of government services to business has expanded appreciably. The Weather Bureau, the Bureau of Mines, the Coast Guard Service, the Department of Agriculture's county-agent service, and various other research and service bureaus have compiled impressive records of accomplishment. A number of marketing service agencies within the Department of Agriculture and within state agricultural departments have gathered data and issued forecasts designed to aid persons engaged in the business of farming. State and Federal departments of commerce and of labor perform a similar service for men of industry and commerce. The Bureau of Standards within the Department of Commerce has fulfilled a vital need by serving as a custodian of standards and as an advocate of standardization and simplification in commercial practice.

The government is particularly active in the field of finance and fiscal policy. Both the Treasury Department and the Federal Reserve System endeavor to provide leadership for the banking and business world generally in fiscal matters. The Federal Deposit Insurance Corporation has also provided an important service for member banks and their depositors during the past two decades.

A great government administrative or-

ganization has been developed to implement the nation's social security program, which was inaugurated under the Social Security Act of 1935 and expanded by subsequent legislation. This service for business and its employees included unemployment compensation and old-age annuities on a contributory basis, as well as old-age pensions awarded on the basis of need.

Numerous other governmental projects at Federal, state, and local levels contribute in important ways to the welfare of business and economic activities. Sufficient instances have been cited to establish the fact that important governmental units aid business enterprise through use of positive measures. In addition, governmental agencies regulate business activity through enforcement of more or less negatively conceived control measures.

GOVERNMENT LIMITATIONS UPON BUSINESS

One of the major governmental limitations upon business activity follows from governmental possession of the police power. Under our federal form of government, the police power is retained by the individual states. The police power enables a state to enact laws for the health, safety, morals, and general welfare of its citizens. Included in this broad grant of power is a tremendous potential for the close control of business by the government. In reviewing a regulatory act passed by a state, the courts assume that the regulation is constitutional unless some express violation of existing constitutional provisions is proven. In reviewing either local or Federal government regulations, however, the courts recognize that these political units can exercise only such powers as are delegated to them by the states. In order to sustain a local ordinance or a Federal law, government attorneys must show that the law falls within the scope of one of the powers expressly delegated, or that it may reasonably be implied from an express grant.

As the characteristic American business unit has grown in size and has spread in geographical scope during the past century, the ability of local and state governments adequately to exercise the police power in regulating business problems of national significance has been severely taxed. In numerous problem areas, the pressure has been overwhelming to bring the Federal government into the picture as a regulator of business activities.

The early American railroads were one of the first industries of the new industrial age to call forth state and Federal regulation. Efforts by rival railroad companies to pool available traffic, rather than to engage in price warfare at heavy cost to all competitors, aroused the resentment of Western farmers and other shipper-political interest groups. The Granger laws, passed by a half-dozen states in the early 1870's, placed limitations upon the rate practices of the railroads. These laws were upheld by the Supreme Court as a proper exercise of the police power in 1876 in the landmark case Munn *vs.* Illinois. The Court declared that "property does become clothed with a public interest when used in a manner to make it of public consequence and affect the community at large." [10]

Continued popular resentment against the railroads, plus a decision by the Supreme Court in the Wabash case (1886) that states could not fix rates upon shipments passing beyond their borders, led to the enactment of the Interstate Commerce Act in 1887. This act set up the Interstate Commerce Commission (I.C.C.) to guard against excessive charges, pools, rebates, and unfair price discrimination by railroads.

Although the original Interstate Commerce Act was so weak as to be ineffective, subsequent legislation over the years has brought the entire transportation industry

[10] See Arthur Meier Schlesinger, *Political and Social Growth of the United States, 1852-1933*, pages 162-3. New York: The Macmillan Company, 1935.

under the close control and continuing supervision of Federal and state governmental regulatory agencies. Other public utilities, such as electric power, gas, and water companies, have been regulated by state public-utility commissions as well.

The same basic problem of monopoly and restraint of trade that underlay the Interstate Commerce Act of 1887 led to the passage of the Sherman Antitrust Act of 1890. Here again the first steps to curb monopoly were taken by individual states through passage of special acts designed to ban conspiracies or agreements in restraint of trade and free competition. The failure of a mere handful of individual states to cooperate, however, made the effort at state-level control unworkable. In order to save the situation, the Congress in 1890 hurriedly passed the Sherman Antitrust Act, which outlawed every "contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states, or with foreign nations." [11] The antitrust powers of the government were strengthened further by passage of the Clayton Act concerning holding companies and interlocking directorates in 1914.

The Federal Trade Commission Act of 1914 declared "unfair methods of competition" in commerce to be unlawful and created an independent commission to enforce this sweeping directive in actual practice. The Federal Trade Commission has built up a body of precedents over the years by issuing a series of "cease and desist" orders to stop business practices deemed to be in violation of the Federal Trade Act. Misrepresenting the truth in advertising, infringing trademarks, and indulging in commercial espionage and bribery are practices calculated to arouse the legal wrath of the watchdog F.T.C.

A number of state and Federal acts have been passed to regulate safety and sanitation conditions in factories, to regulate hours and conditions for women and children in factories, and to regulate the relations of employees and employers in trade-union bargaining situations. Government regulations concerning such items as 1) minimum wages and maximum hours, 2) workmen's compensation, 3) conciliation, mediation, and arbitration, and 4) unfair labor practices are now a familiar part of the institutional framework within which industrial activity occurs.

The power to license certain types of businesses and the power to prohibit entirely certain undesirable lines of business are a logical part of the police power exercised by individual states. The granting of charters to corporations by individual states is an action that follows from the police power.

A second type of power exercised by the government over business units is derived from the right of the government to levy taxes. Most taxes are levied for purposes of producing revenue. The major sources of Federal government revenue are the personal income tax, the corporation income and "excess profits" taxes, and various excise taxes levied on specific types of products. The major sources of state government revenue are sales taxes and various license and privilege taxes. The principal source of local government revenue is the general property tax, although the local sales tax was increasingly resorted to by hard-pressed cities and counties at midcentury.[12]

It is obvious that the taxing power, implementation of which may so heavily affect the financial situation of a business, plays a significant role in shaping the nature and courses of action to be followed by American business enterprise. Under conditions prevailing after World War II, a business firm must earn a much higher rate of return *before* taxes than previously, in order to maintain a percentage return upon invest-

[11] *Ibid.*, page 200.

[12] See Tax Foundation, *Facts and Figures on Government Finance*, 1946–47. New York: Tax Foundation, 1947.

ment after taxation of earnings that will attract investors of new capital.

Excise taxes upon such items as liquor and tobacco are used by the government to pay for necessary costs of government. A number of the legislators voting for these taxes—or, at least, pressure groups among the constituency that led the legislator to vote for heavy excises—favor these steep excise taxes in the belief that the use of the products in question is socially less than desirable. Such groups would favor increasing the rates of these excise taxes beyond the point of maximum revenue return in their zeal to discourage the use of the products in question. In a lesser degree perhaps, many other governmental tax measures have the effect of regulating and restricting business activity, as well as raising revenues needed to operate the government.

Finally, it is obvious that governmental limitations upon business activity vary in scope and in intensity during different periods in our national existence. In time of peace and plenty, the restrictions the government wishes to impose upon business tend to be relatively minor. In times of crisis, such as war or a major depression, the governmental hand upon the reins understandably tightens. Our generation is so familiar with the compulsions of this type of situation (see chapter 3) that it is not necessary to elaborate further at this point.

FREEDOM AND PLANNING

We shall now delve into exposition of the views on freedom and planning expressed by representative economists both in 18th and 19th century England and in 20th century England and America. By undertaking an historical study "in depth" on this topic, we may bring to light elements in the freedom and planning issue that have endured over the years, as well as new developments that arise as man and society evolve and progress from generation to generation. This study of freedom and planning is designed to illustrate the immense complexity of basic political and economic issues when visualized in their total context.

If we can set aside our economic slogans and dogma in favor of analytical reasoning, we shall usually find that apparently irreconcilable views of contending factions may be brought into basic harmony by relating them to the differing circumstances under which and for which they were originally formulated. In most instances, it is only after inherently reasonable political and economic tenets have been abstracted completely from their original context and presented as "universal truths" that head-on conflicts in views appear as an unavoidable result. In studying an economist's views on the appropriate role to be played by government in economic life, we are well advised to relate to these views 1) the economist's conception of the mainsprings that determine human action and 2) the economist's appraisal of the relative competence of particular governments observed by him to cope with specific economic issues of his day.

[The views of 1) Early English Political Philosophers David Hume, Thomas Hobbes, John Locke, Adam Smith, and John Stuart Mill, and of 2) Neo-Classical and Modern Economists William Stanley Jevons, Alfred Marshall, Arthur C. Pigou, and John Maynard Keynes are omitted from this section in the interests of brevity.]

Economist Frank H. Knight. In his dissertation on *Risk, Uncertainty, and Profit*, which was accepted in 1916 and published in 1921, Frank H. Knight wrestles with the problem of "isolating and defining the essential characteristics of free enterprise as a method of securing and directing cooperative effort in a social group."[13] Knight recognizes that human activity might be organized in many different ways, but finds two fundamental problems of organization

[13] *Risk, Uncertainty, and Profit*, page viii. Boston: Houghton Mifflin Co., 1921.

common to any system, namely, the assignment of tasks and the apportionment of rewards. As modern industrial society performs this 2-fold task chiefly through free agreement and voluntary exchange between individuals, Knight believes that it is the task of economic theory to analyze this mechanism, viewed for purposes of scientific simplification as the only form of human relation, so that queries by social-policy makers as to the "natural" results of competition may be answered in terms that are as nearly "fool-proof" as possible. Knight criticizes other theorists not for following the simplified theoretical method, but for not having definite assumptions clearly in mind in working out "principles," which are actually only "tendencies," and, in applying these "principles" bodily to concrete cases, drawing sweeping and wholly unwarranted conclusions from them.[14]

While recognizing that the existing order of "free enterprise" is an individualistic and automatic system in which the interrelations of individuals are determined to be self-seeking on the part of each,[15] Knight stresses the fundamental importance of the fact that a large part of what men want relates directly to other members of society, and "that man is, after all, *zoon politiken* and quite on a par with his personal needs are all sorts of interests in furthering the plans of people whom he likes and, always relatively and generally absolutely, obstructing those of others. . . ." [16]

Although it is admittedly "not the province of economics to determine the value of life in 'hedonistic units' or any other units," [17] Knight expresses his belief that "in our whole higher life above the plane of food and sex and primitive pleasure-pain reactions, our activities result from a single unspecified, undirected tendency to act purposefully, the specific direction of the desire and activity being determined by suggestion from the environment and critical reflection upon such outside suggestion." [18] Thus "other interests are just as fundamental as 'wants,' notably the desire of freedom and power for their own sakes and the preference for certain qualities of human relations."

Uncertainty is also one of the fundamental facts of life for "with uncertainty present, doing things, the actual execution of activity, becomes in a real sense a secondary part of life; the primary problem or function is deciding what to do and how to do it." [19] As "we do not know, either what are right ideals, or how the social-economic process works and what it can be expected to bring forth in the absence of interference, or how to interfere 'intelligently' with its 'natural' operation and development . . . social behaviour must always be largely habit . . . based on sentiment and loyalty rather than on critical deliberation." [20]

The real motive of men in economic life is "the desire to excel, to win at a game, the biggest and most fascinating game yet invented." All the parties to this or any game have a "common interest in the game itself —hence, in general obedience to its rules." But they also have "conflicting individual interest in winning—consequently, in law-breaking or cheating." [21] Liberalism, in dealing with man as he is, must reconcile freedom with order by stressing "co-operation in thinking and acting to promote progress, moral, intellectual, and esthetic, with material and technical progress as the basis of all, and all under the limitation of grad-

[14] *Ibid.*, pages 11–13.
[15] *Ibid.*, page 56.
[16] *Ibid.*, page 182.
[17] *Ibid.*, page 71.
[18] *Ibid.*, page 332.
[19] *Ibid.*, page 368.
[20] Frank H. Knight, *Freedom and Reform*, page 128. New York: Harper & Brothers, 1947.
[21] *Ibid.*, page 209.

ualism and 'seasoned' with humor and play." [22]

Now that we have described the nature of the contest and indicated something of the background of the players, let us follow the progress of the struggle through one or two typical innings to observe some effects of the interplay of self-interest and other motives under the existing enterprise system. We can, thus, form a judgment as to the optimum mixture of individual freedom and government intervention that should be written into this year's rules of the game.

The first essential of the existing system, according to Knight, is that it solves as one problem its two fundamental problems of organization, *i.e.*, it apportions tasks through the apportionment of rewards. The foundation of the process is the private ownership of productive resources, for the essence of ownership is the association of 1) control of the agency and 2) the right of disposition over its product.[23] "Control," of course, consists mainly of selecting someone else to do the "controlling." [24]

The social justification of economic freedom is that "the coupling of control of resources with enjoyment of the fruits of their use is supposed to give an incentive to use the goods effectively in production." Knight emphasizes here that "the dynamic urge back of modern economic life is the desire to increase wealth, rather than a desire to consume goods, though there is admittedly a psychological connection of an irrational sort between the two considerations." [25]

Yet Knight recognizes that the "mere mechanical effectiveness of competitive free contract in producing a reconciliation of individual interests under given conditions depends largely . . . on the extent to which individuals are affected by them . . . otherwise than through direct competition in the market. . . ." Now, "Obviously, outsiders may be affected either advantageously or disadvantageously," and "in the former cases voluntary agreements will not be carried far enough to secure maximum social (total individual) advantage, while in the latter case they will be carried too far." These facts "form the most important source of the need for social interference. . . ." [26] A balancing of conflicting needs is involved here for "no social action can be conceived which will not injure anyone—at least by infringing on his freedom by forcing him to accept the judgment of others in place of his own as to what is good for him." [27]

At bottom, Knight believes that the freedom versus intervention issue is a matter of "feeling" for the property owner, as well as for the masses served by industry, because "private property is a social institution," and "society . . . will maintain the institution only so long as property-owners serve the social interest better than some other form of social agency promises to do." If we get more effective management through the system of concentrated private ownership than we would through some democratic machinery, Knight believes that it is because "men plan better when they do not feel like government officials doing things for other people, but feel their work as their own and identify their personalities with it."

A democratic economic order might conceivably appeal as effectively to the same fundamental motives, but this would require development of political machinery and of political intelligence in the democracy itself to a point where "men in responsible positions would actually feel their tenure secure and dependent only on their success in filling the position well." The real trouble with bureaucracies, according to

[22] *Ibid.*, page 402.
[23] Knight, *Risk, Uncertainty, and Profit*, page 56.
[24] *Ibid.*, page 291.
[25] *Ibid.*, page 320.
[26] *Ibid.*, page 181.
[27] *Journal of Political Economy*, Vol. LIV, No. 2, April 1946, page 173. "Comment on Mr. Bishop's Article" (Professor Knight and the Theory of Demand), by Frank H. Knight.

Knight, is not that they are rash, but the opposite, for "when not actually rotten with dishonesty and corruption they universally show a tendency to 'play safe' and become hopelessly conservative . . . and lead to . . . the arrest of progress and the vegetation of life." [28]

From a pure productive efficiency point of view and with all the factors measured in competitive pecuniary terms, Knight concludes that "it is better to let the individual take the risk in economic life, since he charges nothing for this service, but pays something for the privilege of rendering it —on the average." Moreover, Knight regards change, novelty, and surprise as "values per se," and maintains that "the dynamic and personal factors must be taken into account on the production side of economic conduct, and weighed against the element of efficiency." Thus, Knight believes that "each individual must be given responsibility, freedom of choice, and a wider sphere of self-expression than he can have in a system of organization where control is specialized and concentrated to the last degree." [29]

The existing order affords one way of securing more or less tolerable results in grappling with this problem, so Knight concludes that "candid consideration of the difficulties of the radical transformation, especially in view of our ignorance and disagreement as to what we want, suggests caution and humility in dealing with reconstruction proposals." [30]

Knight calls for a study of other possible systems of organization and a comparison of them with private enterprise in relation to the tasks to be accomplished. He hazards the mild "conclusion" that no one mode of organization is adequate or tolerable for all purposes in all fields." Thus, in the ultimate society, Knight expects that "every conceivable type of organization machinery will find its place," and the problem takes the form of "defining the tasks and sphere of social endeavor for which each type is best adapted." [31]

General evaluation. In studying the ideas of political philosophers and economists on the role of self-interest and of the proper scope for freedom and planning—all the way from Hobbes in the mid-17th century to Keynes and Knight in the mid-20th century—we have been moving toward two, somewhat conflicting conclusions. On the one hand, we may sense that we have made great progress in our thinking, because, looking backwards, many of the worst fears and fondest hopes of these writers, as well as many of the beliefs they assumed to be firm facts, look shallow and not worthy of serious advocacy in light of the advancement of science. A sense of relativity and the need for anchoring general statements to conditions of time and place and the specific situation at hand stand out in the writings of the more modern authors, almost irrespective of the broad conclusions they draw.

On the other hand, despite this more conscious effort to weigh both sides or all sides at the evidence-collecting and discussion stages, there is still a tendency among certain writers to degenerate into mere advocates of "either-or" when they formulate the *economic policies* that they conceive follow from their conclusions as to the proper roles of freedom and planning in the modern state.

Moreover, in other cases in which the original writer has not himself succumbed to the temptation to over-simplify the situation in stating his conclusions, the rule-of-thumb interpretation of his policies by secondary writers, and particularly by the man-in-the-street, has been almost entirely in terms of "either-or."

Moving on to more positive conclusions, we may tend to place considerable emphasis upon self-interest, in a broad sense, as

[28] Knight, *Risk, Uncertainty, and Profit,* page 361.
[29] *Ibid.,* pages 368–369.
[30] *Ibid.,* page 375.
[31] *Ibid.,* page viii.

an efficient motivating force for most men in most societies. For this reason, self-interest is useful as a norm in the same manner as is the abstraction of the "economic man." In actual practice, however, human beings are neither as rational nor as selfish as the above abstractions must assume as first approximations for lack of other, steadier working assumptions.

In correcting our theoretical model of the selfish, rational economic man, we must allow for such common ingredients of human nature as sympathy and hate, the desire for freedom and power for their own sakes, the desire to excel, the drive toward action, the tendency for habitual means to develop into ends, and feelings of sentiment and loyalty. Moreover, we should note, with Knight and Keynes, the mental importance of uncertainty in a progressive society. Real uncertainty removes human action from that theoretical state, high or low, in which enterprise is based upon an exact calculation of benefits to come. It forces us to drive ahead, calculating when we can, but oftentimes relying upon habit or sentiment or a mere chance "hunch."

The case for individualism and for freedom may rest upon broader concepts than mere self-interest, though. It may start from the fact that the limits of our individual powers of imagination make it impossible to include in our scale of values more than a sector of the needs of the whole society. As scales of values differ between individuals, individuals might well be allowed, within defined limits, to follow their own values and preferences, rather than somebody else's. Knight is correct in regarding change, novelty, and surprise, in many instances, as values *per se,* which support the argument for giving each individual more responsibility, greater freedom of choice, and a wider sphere of self-expression than he can have in a system of organization in which control is specialized and concentrated to the last degree.

Yet, in the light of the increasing complexities of our modern society, we can no longer rely upon the adequacy of any automatic "invisible-hand." We must provide for collective wants just as cheerfully as for individual wants. Governmental, as well as private, planning may be cautiously formulated and painstakingly executed so as to preserve that degree of individual freedom deemed requisite to human happiness.

Specific planning for definite objectives recognized as desirable by the great majority of a nation's citizens would appear to be a conscious substitution of enlightened thinking for blind faith in the harmonious blending of instinctive, self-seeking actions. The exchange of information and study required for practical planning might well result in improved conditions. Such democratic planning must be thoroughly sold to the citizens or else it will be abandoned in midstream and be worse than no planning at all. Democracy may have to sacrifice a semblance of short-run efficiency, compared with dictatorship, for greater long-run gains. Regardless of our particular beliefs as to the ends of society, we should keep before us John Stuart Mill's arguments for the cultivation of freedom upon simple utilitarian grounds, so that productive, individual minds with creative bent and experimental leanings might make their fullest contribution to the welfare of society by exploring far and wide in the world of new ideas.

At the moral level, it may well be that the best latent qualities of human nature can only be cultivated within the world we know in a society that involves widespread and continuous participation by individuals in activities, in problem solving, and in planning their own destinies within broad limits. Whether these varied activities can better be carried out under governmental or private auspices seems to depend upon specific issues of time and circumstances. We can, thus, free ourselves of any "either-or" bias and get down to cases in order to forge a workable combination of freedom *and* planning that, under the conditions existing at any given time, will best give expression to the true capacities of man.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	377	In what ways might groups other than the government exercise a degree of social control over economic activity? Illustrate using several different groups as examples.
2	377–379	How might the objectives of social control exercised by various nongovernmental groups differ from social control exercised by the government itself?
3	377–379	Is a law that does not satisfy *any* interest group within our society necessarily a "poor" law? Discuss.
4	378	Why are "negative" controls, which tell people what they may not do, generally regarded as more in keeping with our democratic tradition than "positive" controls, which tell people what they must do?
5	378–381	May individuals who believe in the democratic tradition consistently support the retention of provisions in the Constitution of the United States that might, at some future date, restrict the action of a majority of our citizens with respect to some vital issue? Explain.
6	379–381	Is it reasonable that the Federal government be required to find constitutional justification for its acts to regulate commerce when it is well known that the government itself was established to protect the public interest and to advance the general welfare? Discuss.
7	379–383	To what extent should Federal, state, and local government administrators act as "watchdogs" of their respective spheres of power and to what extent should they disregard organizational lines in the interest of accomplishing specific tasks effectively and expeditiously?
8	381–387	Are the long-run objectives of American business and of American democratic government both adequately summed up in the phrase "the advancement of human welfare"? Explain.
9	381–387	To what extent are the objectives, procedures, and techniques of business administration a) the same as and b) different from those of public administration?
10	381–387	In what respects might a common interest in and dedication to "administration" tend to promote good relations between individual business executives and government executives?
11	381–387	How do you account for the continual expansion in scope of government limitations upon business from the Civil War era to date?
12	387–391	Do you believe that there is a strong possibility that the current observable trend toward collectivistic action within the major nations of the world might give way to a countertrend toward re-privatization?
13	387–391	Are the demonstrated advantages of the private-enterprise system necessarily incompatible with efforts to utilize public planning for the economy as a whole? Discuss.

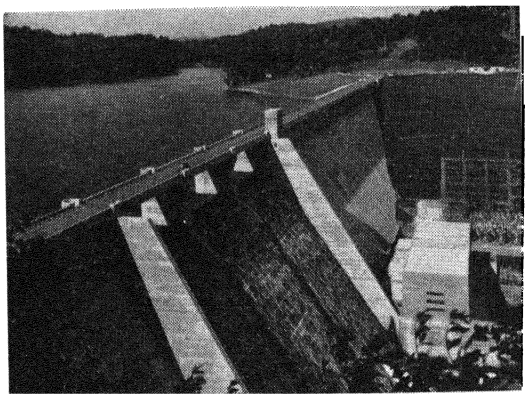
QUESTION NO.	PAGE REFERENCE	QUESTION
14	387–391 & Chapters 1–5	Construct a "Freedom-and-Planning Scale" featuring a "Freedom Pole" at one extreme and a "Planning Pole" at the other extreme with many gradations of "mixed" economics between the theoretical extremes. (See illustration.)



Required Place the following nations at an appropriate point on this scale as of specified benchmark dates. The U. S. as of 1900; Great Britain as of 1925, Russia as of 1910; the U. S. as of 1917–18; Russia as of 1950–51; Great Britain as of 1950–51; the U. S. as of 1948; the U. S. as of 1950–51, the U. S. as of 1942–44; Germany as of 1925, Germany as of 1935; Germany as of 1944–45. Be prepared to defend your evaluations.

15	387–391 & Chapters 1–5	Construct a "Freedom-and-Planning Scale" along lines indicated in question 14 above.

Required: Indicate the average (mean) status of the peoples of the world on a freedom-and-planning scale as of 1900, 1917–18, 1925, 1933, 1944, 1948, 1950 51. Take into account, in rough fashion, differences in population within nations as you develop an "average world status" for each benchmark year listed above.



21 The Role of Government in Economic Life

WHATEVER POSITION ON THE FREE-dom-and-planning scale a particular individual favors for the American economy at a given time, it is important that the process entailed in government participation in economic life be widely understood. In this final chapter on business and public policy, we shall take a close look at procedures involved in economic policy formulation by government today so as to complement our earlier inspection of the freedom-and-planning issue over a considerable span of economic history. We shall tackle the knotty problem of getting a law passed to serve as the basis for governmental activity in a particular time and place. The process and pressures involved in the passage of the Employment Act of 1946 will illustrate the problems underlying the formulation of public policy through legislation in the war-and-peace economy of the '40's and '50's.

Photograph at top of page: TVA's Norris Dam at work symbolizes the role of government as regulator of the flow of economic activity and as generator of improved social standards. (*Brown Brothers*)

THE PASSAGE OF A LAW [1]

The Employment Act of 1946 declares it to be "the continuing policy and responsibility of the Federal Government to use all practicable means . . . with the assistance and cooperation of industry, agriculture, labor, and state and local governments, to coordinate and utilize all its plans, functions, and resources for the purpose of creating and maintaining, in a manner calculated to foster and promote free competitive enterprise and the general welfare, conditions under which there will be afforded useful employment, for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power." [2]

The Act calls upon the President to transmit to Congress early in each regular session an "Economic Report," setting forth current and anticipated economic conditions, and recommending a government program designed to maintain a healthy economy. The Act creates a Council of Economic Advisers whose function is to analyze and interpret economic developments and

[1] The basic approach and many of the data used in this section of the chapter have been recorded by Dr. Stephen Kemp Bailey in a highly readable book *Congress Makes a Law*. New York: Columbia University Press, 1950.

[2] "Employment Act of 1946," Section 2, quoted in Bailey, *op. cit.*, page 228.

economic programs for the President and to recommend national economic policy. The Act also creates within Congress a Joint Committee on the Economic Report to make a continuing study of economic matters and to make recommendations to Congress concerning economic affairs.[3]

This Act of Congress is deceptively simple when summarized—or even when read in full. It actually involves public-policy decisions of the first magnitude in the freedom-and-planning sphere. As a highly controversial piece of legislation, it caused tremendous heat and light as it passed through the arena of public policy formulation during the war-and-postwar period 1944–1946. Let us go at some length into the behind-the-scenes story of the Employment Act of 1946, which has been captured for posterity by Dr. Stephen Kemp Bailey.

The Employment Act of 1946 was first thrown into the legislative hopper in crystallized form as the Full Employment Bill of 1945, receiving the Senate designation of S. 380. This specific bill was itself the end product of more than a score of drafts and re-drafts, focusing around the central idea of "full employment." The finished-draft bill S. 380 itself underwent additional scores of changes, both major and minor in scope, during the process of being considered and passed by the Senate in eight months' time. A sister bill, H.R. 2202, was slashed to pieces and finally disapproved by the House of Representatives in ten months' time. A substitute bill passed by the House enabled House and Senate supporters of the "full employment" concept to salvage from House-Senate Conference Committee deliberations a much dissected descendant—largely "removed"—of the original bill. Upon signature by the President, this modified bill became the Employment Act of 1946.

Thousands of individuals operating within hundreds of pressure organizations expressed their opinions, pro and con, concerning this "full employment" issue over a period of 13 months between introduction of S. 320 and passage of the Employment Act. The matter was widely reported by the press and radio as one of the dozen leading public-policy issues of the day. Many Congressmen both acted and reacted as though their political futures might be made or broken, depending upon how they voted on this bill as finally worded. Yet public opinion polls during the period determined that, 1) while two-thirds to four-fifths of the voting population favored the type of program of government action that would be called for by the Full Employment Bill, 2) more than two-thirds of the voters had not heard of the bill at all, and 3) less than one-twelfth of the electorate had a correct idea of what the bill was about.[4]

a. Origin of the bill. Let us retreat momentarily from the "whirling, buzzing confusion" that is a legislative act in midpassage to the comparatively calm and sheltered environment in which such an act is characteristically conceived and nurtured. The idea of full employment has, of course, occupied men's minds off and on down through the ages. Employment and unemployment conferences were not uncommon during the days of relative "laissez faire" that characterized our American society from 1789 down to the inception of the New Deal in 1932. The New Deal action program, focusing around the Works Progress Administration (W.P.A.) and the Public Works Administration (P.W.A.), represented a largely instinctive response to a felt condition during a severe depression. This New Deal program later found a long-sought theoretical economic justification in *The General Theory of Employment, Interest and Money*, published by Lord John Maynard Keynes in 1936.[5]

[3] *Ibid.*, pages 228–232.

[4] *Ibid.*, pages 9 and 180–181.

[5] See John Maynard Keynes, *The General Theory of Employment, Interest, and Money*, New York: Harcourt, Brace and Company, 1936.

Keynes endeavored to disprove the classical economic theory that the "free enterprise" capitalistic economy was a self-adjusting mechanism that tended to find equilibrium in a state of full employment and maximum utilization of economic resources. The Keynesian analysis develops the possibility of prolonged mass unemployment in a low-activity economy, unless the government undertakes to stimulate new investment by a spending program to the extent that private enterprise alone is unable to fill the bill.

While lying in a hospital in 1944 following an automobile accident, Russell Smith, a legislative representative of the National Farmers Union, conceived of the need for a broad, postwar employment program in the United States along Keynesian lines. Upon his recovery, Smith drafted a proposal calling for the Federal government to underwrite sufficient new investment each year to insure a gross national product of $200 billion a year. Smith tried out his idea at a weekly luncheon "bull session" of government economists. He incorporated many of the suggestions advanced by these economists in the process of approving his idea in principle.

Within six months' time, the Smith idea had found its way into the hands of Senator James E. Murray of Montana, Chairman of the War Contracts Subcommittee of the Military Affairs Committee of the Senate. Senator Murray seized upon the "full employment" measure as a means of raising postwar employment planning to the status of a permanent Federal program, rather than a limited-duration reconversion period program.

The Democratic Party platform in the 1944 election had talked of a postwar "guarantee" of "full employment." President Franklin D. Roosevelt, in a campaign address at Chicago, visualized a postwar America with "close to 60 million productive jobs," adding that "if anyone feels that my faith in our ability to provide 60 million peacetime jobs is fantastic, let him remember that some people said the same thing about my demand in 1940 for 50 thousand airplanes." [6] Smith's idea impressed Senator Murray as a first concrete proposal to implement that Democratic Party promise.

At Senator Murray's request, Bertram Gross, the War Contracts Subcommittee staff director, undertook to draft the text of a possible full-employment bill. Gross requested and received assistance from Russell Smith of the Farmers Union and a number of government economists from the Budget Bureau, the Bureau of Labor Statistics, the Office of Price Administration, and the Bureau of Agricultural Economics. All of these men were interested in the project as a possible implementation of Keynesian ideas on the American scene. After a dozen evening meetings of this informal group of civil servants had been sweated through, a first draft of the "big idea," couched in technical economic terms, was produced. Senator Murray appended this draft bill to the *Year-End Report* of his subcommittee, in order to see what public comments might be dredged up.

b. Senate Bill S. 380. The public press was generally hostile to the Full Employment Bill draft on the grounds that it involved government deficit spending. On the other hand, a number of "liberal" leaders, both in Congress and in the nation at large, were attracted to the "full employment" cause at this time. As the Seventy-Ninth Congress opened in 1945, Senator Murray lined up "liberal" cosponsors for his bill before introducing it for Senate consideration. Each key legislator who joined Murray in cosponsorship, as, for example, Senators Robert F. Wagner and Joseph C. O'Mahoney, exacted as his "price" certain modifications of the original draft, which would make the proposed bill more nearly square with his individual views on the subject. At this time, the main concern of these key politicians was to rephrase the draft bill so as to gain "independent-middle" and "con-

[6] *New York Times*, October 29, 1944, page 34, column 1.

servative" legislative support, as well as the taken-for-granted support of the "liberal" wing of Congress.

Once the Full Employment Bill was introduced in the Senate as S. 380 (January 22, 1945), the professional staff members of Senator Murray's War Contracts Subcommittee developed a carefully thought-out campaign designed to generate the political force necessary to make this new-born bill the law of the land. A vast amount of administrative detail work, of strategy planning work, and of political salesmanship was involved in the comprehensive enactment campaign that unfolded during 1945-46 as the "liberal" forces struggled for passage of the Full Employment Bill.

At one level, the staff collected, analyzed, and distributed available economic data that might conceivably aid their cause. They set about "ghost writing" a comprehensive series of speeches, articles, press releases, and reports that might be made public by the political sponsors of the Full Employment Bill. Over Senator Wagner's signature, the staff developed a "consultation-by-mail" technique designed to elicit information from and solicit the support of 1,500 selected "public opinion formers" throughout the nation.

A similar program was undertaken with respect to all major agencies of the Federal government that might conceivably be factors in the full employment field. The staff also planned and guided the development of a series of public hearings on the bill during the summer of 1945. Moreover, the staff undertook to arouse organized political support for the Full Employment Bill outside of Congress. Three major objectives of strategy in this respect were "1) to arouse public interest, 2) to mobilize and unify the friends of the Full Employment Bill, and 3) to split the opposition" anticipated from conservative business, farmer, and veteran groups.[7]

The proponents of the Full Employment Bill developed active coalition backing for S. 380 among leaders of the C.I.O.'s Political Action Committee, the A.F. of L.'s Legislative Committee, the Union for Democratic Action, the "liberal" National Farmers Union, the "liberal" American Veteran's Committee, and several dozen other "liberal" and "progressive" organizations.

These groups and their constituent members were asked 1) to write to Senators and Congressmen for "information" about the bill, 2) to study the bill, 3) to discuss it with others at every opportunity, 4) to arrange discussions in organizations leading to resolutions in support of the bill, 5) to interest local newspapermen in the subject by furnishing them with news items related to it, and by writing letters to the editor in support of the bill, and 6) at a later time, to begin correspondence with Senators and Congressmen to make them aware of back-home interest in the bill.[8] The "Liberal-Labor Lobby" group backing the Full Employment Bill also organized a program of direct and indirect lobbying designed to exert pressure upon key legislators whose actions might significantly affect the chances of the bill for favorable Senate and House committee action and for favorable action by the full legislative bodies on the Senate and House floors.

It is well to note that at the 1945 session of Congress "the U.S. Senate passed 1,005 bills and resolutions, voted for 23 investigations of which nine were by special committees, handled 11,056 Presidential nominations, and filled up 5,960 pages of the *Congressional Record* with its proceedings." [9] Besides full employment, the Senators had to find time to discuss "the extension of the reciprocal trade agree-

[7] See Bailey, *op. cit.*, pages 61–78.
[8] See Bailey, *op. cit.*, pages 84–85.
[9] Floyd M. Riddick, "The First Session of the Seventy-Ninth Congress," *The American Political Science Review,* Volume XL, April 1946, quoted in Bailey, *op. cit.*, page 99.

ments, the organization of the United Nations, the death of Roosevelt, the Bretton Woods agreement, the end of the war, the Civil Aviation Treaty, the atomic bomb, the extension of war powers, the return of the United States Employment Service to the States, the extension of O.P.A., and appropriations to the Fair Employment Practices Commission, to name only a few." [10]

Only six measures received more attention in the *Congressional Record* than the Full Employment Bill. Yet the bill received only 12 days of committee hearings, a few days of closed committee sessions, and 4 days of floor debate by the world's greatest deliberative body before final passage.[11] It can readily be appreciated how crucial may be the contribution of a Senate Committee or of an individual Senator to the passage or defeat of a measure under these circumstances.

The sponsors of the Full Employment Bill used the public hearings conducted by the Senate Banking and Currency Committee as an opportunity to sell to the American public and the Senate itself the merits of S. 380. They sought to create a symbolic identity between "opposition to the bill" and "membership in a 'small and selfish minority' who do not 'really want a stable and expanding economy.'" [12]

Dr. Bailey, after thorough study of the Senate hearings, has picked the following two passages to illustrate the extent to which Senatorial proponents of the bill served as prosecutors, as well as judges, when hearing witnesses who responded to an invitation to testify in support of or in opposition to the bill:

Example 1: "After Clarence Avildsen, Chairman of the Board of the Republic Drill and Tool Company of Chicago, had made a statement in strong support of S. 380, the hearing continued as follows:

The Chairman (Senator Wagner): Well, I can say for myself, that is a very splendid statement.

Mr. Avildsen: Thank you.

The Chairman: It ought to be distributed to all the businessmen of the country.

Mr. Avildsen: Thank you.

The Chairman (turning to Senator Murray): Senator?

Senator Murray: I do not think the statement calls for any questioning on my part. . . . It is your judgment, as a liberal businessman, that it is necessary for the Government to take a hand in this situation and undertake to aid and encourage business in bringing about the highest possible production and employment?

Mr. Avildsen: Absolutely, and I think it is the only way we can do it. I think this is something that should have been done a long time ago.

Senator Murray: If we had such a measure as this in existence in the late twenties or during the period following the last war, we could have avoided the very serious depression that came on following the crash in Wall Street in 1929.

Mr. Avildsen: Absolutely.[13]

Example 2: "On the other hand, when William Kleitz, Vice President of the Guaranty Trust Company of New York, issued a strong statement on the defects of the bill, he was met by a withering blast . . . Senator Murray interrupted to ask:"

Senator Murray: Why do you select this period, the two periods, the twenties and the thirties, to illustrate the points you wish to illustrate here? It seems to me that those were two unusual periods in the history of our country. In the first place, the twenties was a period of inflation brought on by American business. Then the 1930's was another unusual period in the history of the country in which there was an effort to bring back employment in the country. Why couldn't you select some other period in the history of the United States that could illustrate the point that you wish to illustrate here?

Mr. Kleitz: Well, if we say the 1920's was a period of inflation, of course an inflation is the

[10] Bailey, *op. cit.*, pages 99 100.
[11] *Ibid.*, page 100.
[12] *Ibid.*, page 105.
[13] *Senate Hearings on S. 380*, pages 418–419, as quoted in Bailey, *op. cit.*, page 108.

hardest thing in the world to define. I am not sure I know what the definition is.

Senator Murray: Do you approve the rapid rise in stocks and securities during that period and the manipulations that took place on the stock exchanges of the country which were afterwards investigated by the Banking and Currency Committee, shown to be fraudulent and dishonest?

Mr. Kleitz: No sir; I certainly do not condone anything fraudulent or dishonest.

Senator Murray: You realize that in the period of the 1920's that the manipulations that were going on were draining the country of its wealth. You were manipulating these stocks and securities, running them up to a fictitious value and getting the people to purchase them, and they were afterwards defrauded. Isn't that true?

Mr. Kleitz: You say "You were doing that."

Senator Murray: Well, you represent the banking and financial fraternity down in Wall Street. You are coming here to oppose this bill, and I say you represent them down there and you represent their philosophy.

Mr. Kleitz: May I say, with all due respect, that I am coming here because Senator Wagner telegraphed and asked if we would have a representative come to this hearing.[14]

The Senate hearings had the valuable by-product of making known to the Committee and to the full Senate the views of numerous pressure groups, the press, economists, political scientists, and other citizens in various walks of life on the Full Employment Bill. The Committee members revised the draft bill in numerous particulars to meet objections and to capitalize upon suggestions made during public hearings. The majority members of the Senate Banking and Currency Committee, which conducted the hearings, wrote an enthusiastic report favoring the bill. The minority members wrote an equally partisan report condemning the methods prescribed in this bill, which admittedly sought to achieve universally accepted goals of full employment and prosperity. The weight of the minority attack lay in its contention that the untried theories contained in the bill would, in the end, destroy freedom itself.[15]

After two days of floor debate, the Senate approved an amended version of S. 380 by a vote of 71–10. A number of influential Republican Senators signified their intention to support the bill once amendments tempering the scope of government commitments had been pushed through the Senate by very close votes. This action enabled the modified bill itself to pass by what appeared to be an overwhelming vote.[16]

c. House Bill H.R. 2202. The Full Employment bill was introduced in the House of Representatives as H.R. 2202 on February 15, 1945, within two months of the time that Senator Murray had introduced S. 380 in the upper chamber. Unlike its Senate counterpart, however, the House bill fell into the hands of an essentially hostile committee, which was content to permit the "full employment" concept to languish on the vine. The House Committee on Expenditures in the Executive Departments did not open hearings on H.R. 2202 until September 25, 1945, just three days before actual Senate passage of S. 380. This committee continued its hearings intermittently until November 7. The proportion of witnesses who "accentuated the negative" in the House hearings was significantly higher than was the case in hearings on S. 380. In part, this situation reflected the "conservative" make-up of this House committee. In good part, also, it reflected the fact that "conservative" forces were at long last awakening to the fact that the "liberals" had already carried the ball on a long end sweep by pushing S. 380 through the U.S. Senate.

The nature of the mainstay organizations that opposed the Full Employment Bill in both houses of Congress is illustrated by reference to the following representative groups:

[14] *Ibid.*, pages 524–525.
[15] Bailey, *op. cit.*, pages 117–118.
[16] *Ibid.*, pages 125–126.

1. The National Association of Manufacturers, whose president, Ira Mosher, testified that "it is my private opinion that the bill is nothing more nor less than a plain Government-spending bill," adding that "there could be no greater discouragement to business (than this type of legislation)." [17]

2. The United States Chamber of Commerce, whose president, Eric Johnston, made *no* public statement, for he was *not* opposed to the bill. Johnson's understandable silence left the field to spokesmen for state and local chambers who developed forceful educational campaigns for the purpose of arousing businessmen and their friends against the threat raised by the "full employment" planners in Washington.

3. The American Farm Bureau Federation, whose president, Edward O'Neal, in representing "big agriculture" members, as well as small "dirt farmers," was not in serious disagreement with N.A.M. with reference to the evils flowing from government intervention in economic affairs.

As the House hearings dragged on through October, the strength of opposition forces continued to increase markedly. For one thing, the predicted slump in employment that was slated to follow the end of the war stubbornly failed to materialize. The "must" nature of the Full Employment Bill was increasingly a matter for dispute. Finally, on October 30, 1945, President Harry S. Truman scheduled a major radio address for the purpose of castigating the House Expenditures Committee for failing to act on the Full Employment Bill. Formal committee hearings were finally closed on November 7, a week after the President's controversial talk. The report of the House committee was not made to the House itself until another full month elapsed. Actually, the House committee rejected H.R. 2202 by a 1-sided vote of 17-3 in a poll held on November 7 as the formal hearings closed.[18] The month's delay was taken up in part with the drafting of a new substitute bill to provide for an economic-planning mechanism and a public-works program, while avoiding dangerous Federal commitments along planning lines.

The final House debate on the Full Employment Bill was held on December 13 and 14, 1945, under conditions of tight parliamentary control imposed by a Rules Committee majority, which acceded to the hostile Expenditures Committee chairman's wish to limit debate drastically under the "five-minute rule." When the House vote was recorded on December 14, the Truman administration's bill was defeated by a vote of 185 to 95. A substitute bill was passed, however, by a vote of 255 to 126.

d. Conference and compromise on the Full Employment bills. The passage of the substitute House bill made possible the scheduling of meetings by a joint Senate-House Conference Committee. This committee held sessions in Senator Barkley's office over a period of two weeks. Out of the conference came the Full Employment Act of 1946 in a shape that was recognizable, but did not closely resemble the Full Employment Bill that went into the legislative hopper just 13 months earlier.

Senator Barkley played a key role in ending innumerable stalemates during the conference sessions. Several of the House and Senate conferees found it extremely difficult to "do business" with committee colleagues who were personally unacceptable to them because of character traits—or lack of same. Barkley's principal task was to jolly the various contending parties into setting personalities aside so that the conferees might focus attention upon the legislative issues before the committee.

A series of Barkley stories and jokes appeared to have a favorable cumulative effect upon the conferees. At any rate a compromise bill at last emerged. This bill was acclaimed by "conservatives" and "liberals" alike as a major victory for their particular point of view. The House and Senate

[17] *Senate Hearings on S. 380,* pages 556 and 576, as quoted in Bailey, *op. cit.,* page 134.

[18] *Congressional Record,* 79th Congress, 1st Session, December 13, 1945, page 12204, as quoted in Bailey, *op. cit.,* page 164.

members were both told by their reporting conferees that the sister house had made the necessary concessions. In all critical passages of the bill, the original phrasing was reworded so as to become acceptable to all contending parties. Only the group that literally wanted no act at all felt that it had been less than successful in controlling the final outcome of the "full employment" struggle in the halls of Congress.

The Employment Act of 1946 was passed in the House of Representatives on February 6, 1946, by a vote of 320 to 84. It was passed by the Senate without opposition once both Senator Taft and Senator Murray announced their endorsement of the compromise conference bill. When President Truman affixed his signature to Public Law 304 on February 20, 1946, the Employment Act of 1946 became the law of the land.

The reader is reminded that this exhaustive narrative of the passage of an act of Congress represents just "the end of the beginning" as far as formulation of government policy with respect to "full employment" is concerned. The administrative machinery required to carry out the directives of the legislation had to be created, guided, and controlled. The President sought to satisfy as many political-interest factions as possible through appointment of economists Edward G. Nourse, former vice-president of the Brookings Institute, John D. Clark, former dean of the College of Business Administration at the University of Nebraska, and Leon Keyserling, former Roosevelt Administration legal and economic adviser, to staff the Council of Economic Advisers called for by the Act.

The administrative procedures set up and the administrative precedents laid down by these largely advisory officials were bound to exert an influence in this field for years to come. Only after a long shakedown cruise had been completed could the legislators, the pressure groups, and the public at large begin to appraise adequately the final outcome of their collective handiwork with regard to one of the many major public policy matters of the day. Long before this appraisal procedure could become technically feasible, the focus of public interest had moved on to other policy matters of great moment. The Council of Economic Advisers was left to cope as best it could with what was, upon delivery, essentially "nobody's baby."

GOVERNMENT IN BUSINESS AND "BUSINESS" IN GOVERNMENT

The widely held concept that business and government are two completely distinct and characteristically embattled forces will not stand up under close analysis. We have already noted that businessmen participate continuously in government through the working of the political process. This process includes the bringing to bear of lobbying pressure upon government officials by business as a party at interest, as well as the more common civic activities carried on by businessmen as individual citizens.

We shall illustrate in this section that the government is "in business" in the deeper sense of that term. We shall note that government regulation of business involves business policy decisions of the first magnitude by Congress initially and by government administrators within the executive department or within independent commissions subsequently on a continuing basis. We may find developments that hold forth promise that our nation as a whole may evolve 1) political techniques through which to crystallize public policy effectively upon vital issues and 2) administrative techniques through which to carry out effectively the will of the electorate, with regard to actual problems that arise during the implementation of public policy. To the extent that the government is "in business," businesslike methods of analyzing problems and of initiating appropriate action bearing upon these problems would seem highly appropriate.

It is intended that one over-riding fact be brought out in this chapter. To "clear

out the underbrush," it may be conceded that the specific environment of government is different from that of business. It may be acknowledged that the traditions of the two services are largely different. It may be granted that the specific problems encountered within the two fields are almost endlessly varied. Nevertheless, from the point of view of *administration,* the common core of professional activities involved in setting administrative policies, determining appropriate procedures, applying techniques effectively, exercising close control, and providing strong leadership makes the jobs of government administrator and of business administrator far more noteworthy for their likenesses than for their unlikenesses. In all senses of the "slogan" that serves as title for this section, there is a real place today for "government in business and for 'business' in government."

Extensive business policy decision-making. The government of the United States has played an active role in the economic life of the nation ever since the founding of the Republic in 1789. A great increase in the complexity of government relations with economic groups over the course of our growth and development may readily be acknowledged. The changes that have occurred during this period are matters of degree, however, rather than of kind.

The First Congress of the United States in 1789, upon Alexander Hamilton's urging, passed a tariff act that had as one of its principal features "the encouragement and protection of manufactures." [19] Whatever their economic merits, succeeding tariffs retained features of this type designed to foster the interests of domestic business enterprise throughout the 19th and the first half of the 20th centuries. The adoption in the United States of 1) the basic features of the English common law during the 18th century and the interest shown by government in 2) the enforcement of contracts, in 3) patent rights, in 4) currency regulation, in 5) the promotion of transportation, and in 6) the organization of corporations during the 19th century and in 7) its myriad functions today, bespeak of continuing activity by government in the business and economic sphere throughout our national history.

The American legal system carried over from its English common-law ancestor the practice of recognizing that some business enterprises are "affected with a public interest" or have "dedicated their properties to a public use" far more directly than other businesses in more ordinary areas of our economy. The courts resort to legal language in rationalizing the feeling of the justices on this point. The underlying reason why such properties as toll roads, canals, railroads, and water companies were declared to be public utilities was essentially economic, rather than legal or political in nature. These so-called public-utility properties provided essential services, it is true. Yet, this characteristic is also shared by the coal industry, the steel industry, the auto industry, and the meat industry in modern economic life. The distinguishing characteristic of a public utility is that the normal self-regulating action of market competition cannot be effectively applied to ensure the operation of these private businesses along lines which will further the public interest.

Public utilities typically involve a heavy investment of capital in properties located in strategic positions in which a "natural" monopoly would provide adequate service and eliminate a tremendous duplication of facilities. A monopoly in private hands is abhorred by the public under a system of individual enterprise. Special regulation by government commissions is called for to keep the public-utility owners in step with the public interest. Public utilities are usually granted governmental powers of 1) eminent domain, 2) use of public properties

[19] Leverett S. Lyon, Victor Abramson and Associates, *Government and Economic Life,* Volume 2, page 1263. Washington, D. C.: The Brookings Institution, 1940.

for facilities, and 3) protection against direct competition within their franchise area. In return, these public utilities are required 1) to render adequate service, 2) at reasonable rates, and 3) without unjust discrimination among customers.[20]

The public service commissions, which have been established in individual states to regulate various public-utility operating companies, have been reasonably successful in stamping out unfair discrimination and in requiring an acceptable level of service. Some question remains as to whether or not the public utilities as a whole have been stimulated, under sheltered monopolistic conditions, to develop efficiency standards that will result in an ever-improving product at an ever-decreasing cost to the consumer. Even granting that the product is improving steadily and that the cost is decreasing significantly, the question still remains as to whether or not the rate of improvement is the "optimum" one which the public has a right to expect.

The regulation of transportation.[21] With the rapid rise in industrialism subsequent to the Civil War, an insistent public demand developed for increased government regulation of business activities in specific segments of the economy. The demand for regulation of the railroads by the "embattled farmers" of the West brought into being a series of Granger Laws at the state

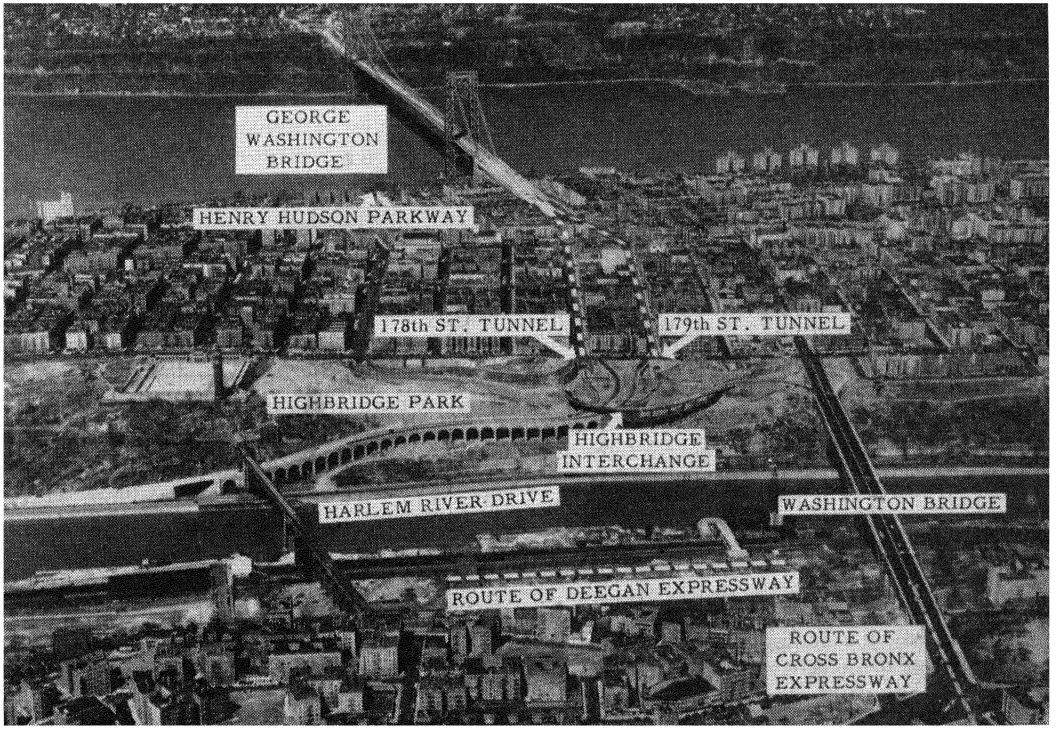


Figure 21-2: The need for extensive government planning and regulation at the community level is symbolized in the work of The Port of New York Authority. (*The Port of New York Authority*)

[20] See James C. Bonbright, *Public Utilities and the National Power Policies*, page 3. New York Columbia University Press, 1940.

[21] The reader is reminded that the regulation of the radio-television industry is discussed in chapter 4.

level in the '70's and '80's. Further developments led to the passage of the Interstate Commerce Act at the national level in 1887. This railroad regulatory act was shortly followed by the Sherman Antitrust Act of 1890, which prohibited certain monopolistic activities in commerce.

The two acts were symptomatic of public sentiment against alleged abuses of business during that era. Let us now explore (in illustrative fashion) some of the business policy decisions inherent in government regulation of the transportation industry over a period of several decades following passage of the original Interstate Commerce Act. Our study may be shortened and intensified in that we have already surveyed transportation developments broadly in chapters 1–3 and in chapter 12.

The Interstate Commerce Act of 1887, though weak in its provisions by later standards, opened up a new era in transportation regulation and in governmental regulation generally within the United States. This Act of Congress created a 5-member Interstate Commerce Commission, to be appointed by the President with the advice and consent of the Senate, with powers and responsibilities as follows:

1) It was given the power and duty to inquire into the business of common carriers and keep itself informed of the manner in which their business was conducted. To accomplish this purpose the Commission might require the attendance and testimony of witnesses, and the production of books, papers, contracts, agreements, and documents relating to any matter under investigation.

2) The Commission was to hear complaints for alleged violations of the Act. If the carriers did not satisfy the complaint the Commission was required to investigate the matter in dispute. If violations of the law were found the Commission was to order the carriers "to cease and desist" from the unlawful practice, and it was to determine the amount of damages, if any, suffered by the injured party.

3) The Commission might require annual reports of the carriers and prescribe a uniform system of accounts.

4) Annual reports were to be made to Congress by the Commission. These reports were to contain such information as might be of value in connection with the regulation of commerce, and any recommendations for additional legislation that the Commission considered necessary.[22]

The Interstate Commerce Act itself required in Section 1 that all rates be "reasonable and just," and declared that "every unjust and unreasonable charge" was illegal. In Section 2, the Act outlawed "personal discrimination," *i.e.*, a situation in which a common carrier "directly or indirectly, by any special rate, rebate, drawback, or other device, charge, demand, collect, or receive from any person or persons a greater or less compensation for any service rendered, in the transportation of passengers or property . . . than it charges, demands, collects or receives from any other person or persons for doing for him or them a like and contemporaneous service in the transportation of a like kind of traffic under substantially similar circumstances and condition. . . ." [23]

In Section 3, the Act went on to prohibit any unjust discrimination, whether between persons, places, or kinds of traffic. Other sections 1) forbade a greater charge for a shorter haul than for a longer haul under substantially similar circumstances and conditions over the same line and in the same direction, 2) prohibited pooling agreements, and 3) required publication of rates and fares.

The American railroads, in general, endeavored to conform with the requirements of the Interstate Commerce Act. This venture in public regulation had a number of salutary effects. Weaknesses in the legislation gradually appeared, however, as the courts and Commission administrators gave the Congressional provisions specific content—and in some instances a very special-

[22] D. Philip Lochlin, *Economics of Transportation*, page 218. Chicago: Richard D. Irwin, Inc., 1947.
[23] *Ibid.*, page 217.

ized and novel content. Moreover, the conditions that led to passage of the Act underwent change with the passage of time. As a result, a long series of acts passed during subsequent Congressional sessions was required to keep the I.C.C. and other regulatory bodies in the transportation field abreast of actual transportation developments. Amendments to the original Interstate Commerce Act during the first three decades of its existence were passed in 1889, 1893, 1903, 1906, 1910, 1912, 1913, and 1917.

After a period of actual government operation of the railroads during World War I, the railroads were returned to private operators under terms of the comprehensive Transportation Act of 1920. Congress held extensive public hearings during 1919 and 1920 to record the views of various interest groups concerning our transportation system and its regulation in the public interest. Testimony brought out that existing railroad regulation was believed to be inadequate in the following major respects:

1) There was no control of railroad capitalization, except that which was exercised by state governments.

2) Control over railroad service was almost nonexistent, for regulation had been concerned primarily with rates and discrimination.

3) The machinery for settlement of railroad labor disputes had not proven reliable in time of crisis.

4) The policy of enforced competition was not working out to public advantage, for it encouraged "abuses," such as a) wasteful hauls by circuitous lines, b) cross-hauling, c) unjustifiable enhancing of service in competitive areas at unreasonable cost to transportation users as a whole, d) rebates and personal discrimination, e) duplication of railroad facilities and investment of capital in unnecessary railroad lines.

5) Regulation was too restrictive in its approach, typically placing the burden of proof upon railroads, but not placing responsibility upon the I.C.C. to give the railroads an adequate income so that they could perform the services required.

The Transportation Act of 1920 incorporated measures designed to ease all of the above-listed problems. Moreover, the Act set forth a rule of rate-making which placed an important new responsibility upon the I.C.C. to "foster" as well as "control" the railroads. This rule of rate-making, contained in Section 15a of the Act, reads as follows:

> In the exercise of its power to prescribe just and reasonable rates the Commission shall initiate, modify, establish or adjust such rates so that carriers as a whole . . . will, under honest, efficient and economical management and reasonable expenditures for maintenance of way, structures and equipment, earn an aggregate annual net railway operating income equal, as nearly as may be, to a fair return upon the aggregate value of the railway property of such carrier held for and used in the service of transportation: *Provided,* That the Commission shall have reasonable latitude to modify or adjust any particular rate which it may find to be unjust or unreasonable and to prescribe different rates for different sections of the country.[24]

The Transportation Act of 1920 also directed the Interstate Commerce Commission to prepare and adopt a plan for the consolidation of the railroad properties of the United States into a limited number of systems under the following general principles:

1) Competition should be preserved "as fully as possible."

2) Wherever practicable the existing routes and channels of trade and commerce are to be maintained.

3) Subject to the foregoing requirements the system should be of approximately equal earning power under a uniform level of rates.[25]

It was the long-range plan of Congress that the problem of supporting all the railroads from earnings, without having relatively strong roads earn exorbitant returns

[24] Section 15a of the Interstate Commerce Act, 1920 amendment, as quoted in Lochlin, *op. cit.*, page 240.

[25] Lochlin, *op. cit.*, page 245.

or having relatively weak roads incur deficits, would eventually be solved by consolidating hundreds of independent railroad companies into a relatively few systems of equal earning power.

The Transportation Act of 1920 was one of the most comprehensive pieces of legislation to come from an American Congress. It was received by railroad management and by businessmen generally with some show of enthusiasm. The Act was thought to lend balance to the regulatory picture and to mark the maturing of the I.C.C. as a government regulatory body. The rapid pace of change in underlying economic factors was not, however, a respecter of Congressional intent. The Transportation Act of 1920 rapidly became "dated" with reference to the real problems of a new transportation era.

The rapid rise of motor transportation as a competing mode during the 1920's, the birth of commercial air transportation, the revival of water transportation, and the spectacular growth of pipe-line transportation, all combined to undermine the "grand plan" of Congress and the I.C.C. with respect to the future of the U.S. transportation sytem. This gradual shifting of fundamental realities continued under a surface calm throughout the 1920's. The crash of '29 and the Great Depression of the '30's brought the whole transportation industry up for Congressional review again in 1932–33 as a hard-pressed, secularly "sick," and troubled segment of the American economic fabric.

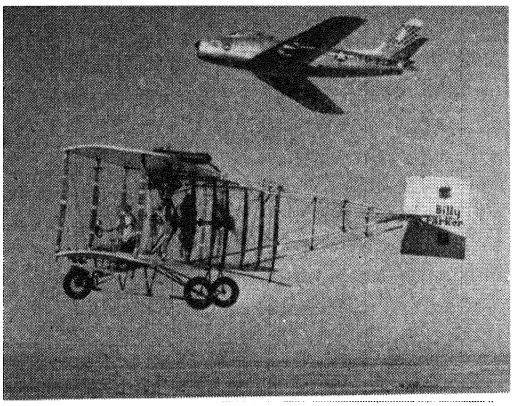
We need not carry the transportation story along to the current date in this general text. We have merely dipped into the pages of regulatory history to illustrate a fundamental concept. It is that the regulation of business by government involves the formulation of business-policy decisions of the first magnitude by Congress initially and by government administrators within the executive department or within independent commissions subsequently on a continuing basis.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	394–395	Of what significance to a Congressman considering the "full employment" issue in 1945 might be the public opinion poll finding that a) ⅔ to ⅘ of the voting population favored the type of government action which would be called for by the Full Employment Bill, b) more than ⅔ of the voters had not heard of the bill at all, and c) less than 1/12 of the electorate had a correct idea of what the bill was about?
2	394–396	In your opinion, would a "full employment" bill have come up for Congressional consideration post-World War II if there were no individuals named John Maynard Keynes, Russell Smith, and James E. Murray? Explain.
3	395–399	What motives and interests do you believe played significant roles in leading various individuals and groups to assume active roles in the fight for passage of S. 380? Use specific names in developing your analysis.
4	396–399	Do you believe that the "pressure" campaign for passage of S. 380 conducted by the professional staff of the War Contracts Subcommittee and by the "Liberal-Labor Lobby" represents a desirable type of activity within our democratic society? Discuss.

QUESTION NO.	PAGE REFERENCE	QUESTION
5	397–398	Through what procedural devices is the U.S. Senate enabled to cope as well as it does with the overwhelming mass of legislative issues which comes up for consideration during a typical session of Congess?
6	398–399	Did the Senate Banking and Currency Committee tend to conform with your personal concept of "due process" in its conduct of public hearings upon the merits of S. 380? Discuss.
7	399–400	In your opinion, were the "delaying tactics" resorted to by the House Committee on Expenditures with reference to H.R. 2202 a legitimate exercise of that group's discretion in screening bills that are proposed for consideration by the House of Representatives? Discuss.
8	399–401	As a special Washington "observer" for the National Association of Manufacturers, what program of action would you recommend that the leaders of N.A.M. adopt to implement their opposition to the principle of government intervention in business represented by the "full employment" bills?
9	400–401	As a Senate conferee on the joint Senate-House Conference Committee appointed to iron out differences in the Senate and House "full employment" bills, what procedures would you follow to obtain agreement and what criteria would you set up to determine a "good" compromise bill?
10	401–406	In what ways is government "in business" when it undertakes to regulate railroads and other transportation utilities by placing them under the jurisdiction of special commissions, such as the I.C.C. or state public service commissions?
11	401–406	A conservative businessman has been quoted as saying that "government regulation of public utilities is desirable as well as inevitable." Why, in your opinion, might an advocate of maximum freedom for business in general consistently adopt a position that distinguishes between "public utility" industries and "the main stream" of business?

CONCLUSION: Some Objectives of Business



BUSINESS COMPRISES ALL OF THE myriad activities associated with the production and distribution of goods and services needed to satisfy the material wants of man. Modern business characteristically involves complex processes in which indirect methods predominate and in which the stages are many through which products pass as they move from producers to ultimate consumers. In thinking of the business world we should encompass much more than the activities of owners and managers of industrial and commercial enterprises. Laborers, white collar workers, and farmers participate in the economic activities of the business world and have a large share in determining the role that business is to play in a given society.

As business activities do not occur automatically, someone must provide specific plans, direct specific activities, and control specific operations if the process we describe as "business" is to function smoothly. Individuals who plan, direct, and control business activities involving men, machines, and materials are called business administrators.

In a private enterprise economy, such as exists in the United States today, business administrators play a key role. They help to direct business activities along lines that will enable business to perform a genuine economic service that will satisfy human wants. The business administrator determines what types and quality of those products wanted by consumers that his enterprise can undertake to provide in competition with other suppliers. He makes financial plans in order to secure, use, and control manpower, machines, and materials as he carries on the production process. The business administrator sees to it that his plans are executed properly so that desired products are actually turned out under satisfactory circumstances.

The administrator exercises control over the business activities of those to whom he gives directions. In the event that his plans are not working out satisfactorily, the business administrator takes whatever steps he can to remedy conditions or to change his original plans so as to fit new conditions.

The business administrator rarely has a problem with known limits when he prepares plans for the activities of his enterprise. The future status of raw-materials costs, of labor costs, of machinery costs cannot be predicted with certainty. Changes in consumer demand, actions of competitors, and other changes in the economic and

Photograph at top of page: Four decades of progress are symbolized as an Air Force F-86 Sabre jet flies past a 1912 model pusher biplane. (*North American Aviation, Inc.*)

social structure may be expected to upset any overly-exact calculation of the future. Nevertheless, the business administrator must forecast future conditions as a basis for current actions if he is to serve his function in society.

The key task of the business administrator in this field is to get the best available data together quickly, to sift and classify ideas and facts, to determine their meaning and their interrelationships, and to weigh their relative importance to the task at hand. A high degree of risk and uncertainty typically confronts the business administrator in a private enterprise economy.

Yet the social responsibility of the business administrator for making wise decisions is none the less impelling. To err in the selection of policies, organization, facilities, and techniques for the production and distribution of goods and services is to waste the limited resources of the society. Not only the individual directly associated with an individual enterprise, but also society as a whole, suffers when business is at less than its best.

Any form of economic system proposed in modern society must produce efficiently large quantities of needed goods and services. The central production problem faced by the economy is that of utilizing basic factors of production, namely land resources, labor, capital, and managerial ability, in such a way that they will satisfy the highest combination of needs felt by members of the society. As the means of production are scarce in any economic system in relation to total potential needs, the national product of goods and services is also limited relative to demand. For this reason, such items as are produced are valuable and prices are set upon them.

Under a price system, specialized products may be transferred readily from persons who want them less to persons who want them more. Moreover, prices enable the consumer to determine whether or not he wishes to purchase specific items with his limited means. They also allow the producer to determine whether or not his basic costs of production are being covered by the return he receives. The ability of an organization to keep expenses under income may be used as a rough test of efficiency under any type of economic system.

In the capitalistic system, the profit motive is relied upon as an incentive and guide to bring about the production of needed goods and services. In their search for ways in which to use the factors of production profitably, business enterprisers are expected to turn up new inventions, new methods of production and distribution, and new types of services. Under certain conditions the government may intervene to contribute funds for special purposes as a matter of public policy. Yet, in the main, the profit margin between costs and revenues, as determined by the action of a free market, sets the pattern of production in a capitalistic economy. In general, the enterpriser who can utilize the factors of production to best advantage is in a position to offer a high competitive price for their services.

It is important to draw a distinction between short-run and long-run profits. Business management is constantly confronted with decisions that call for a choice between taking an immediate profit, with the risk of bad effects in the future, or deferring immediate profit, with the possibility of compensating gains in the future through increased consumer goodwill or through the eventual development of an improved product.

In watching over the business enterprise as a whole, the professional business administrator recognizes that a firm cannot long perform its functions unless the interests of the public, of the workers, and of the owners are successfully combined. Thus, management focuses upon long-run interests while trying to harmonize short-run conflicts. It attempts to render the public its desired service so effectively that the company's income will be sufficient to meet

the employee demand for high wages and the owner demand for attractive profits, without jeopardizing the public interest in high quality and low price.

Individuals differ widely in their relationships to business. Some business people regard their business activity as merely a means for the securing of sufficient funds with which to purchase necessities and luxuries for their families. Other business people tend to regard their business activity as "a way of life." In such cases, business is more than buying and selling, is more than making a product, is more than rendering a service to the consumer. Business becomes a social, as well as an economic, relationship. In such cases, business activities are as satisfying to the individual as are outside social activities to the man who regards business solely as a means of earning money.

A great task confronting schools of business and all divisions of universities in which such schools are located is that of educating future business leaders along broad lines so that they will understand the functioning of the economy and of the society within which they live. If businessmen can be trained to recognize their responsibilities under ever-changing circumstances, they may also be expected to accept these responsibilities and to act in constructive fashion when and as the need for action does arise. This task of serving society calls for skill, wisdom, and statesmanship of a high level. The health and safety of workers, the fortunes and savings of individuals, the welfare of customers, and the perpetuation of a good life demand competence upon the part of business administrators. Business, in this sense, is a profession of the highest order.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	408–410	To what extent might an advocate of the profit system also consistently advocate increased social responsibilities for businessmen? Tie in the concepts of short-run and long-run profits in your response.
2	408–410	What groups within our society are affected by decisions made by the management of the General Electric Company? What are the primary interests of each affected group in a decision by G. E. management a) to raise prices? b) to resist a wage demand? c) to abandon a branch plant? d) to build a new research laboratory? and e) to expand production 50 per cent in all existing plants?
3	408–410	"It is over-simplification to claim that businessmen are slaves of the profit motive. Individual businessmen differ widely in the reasons for which they conduct their business. The profit motive provides a useful type of incentive, but it does not adequately account for the wide range of activities engaged in by our business leaders." Discuss the major incentives, drives, and motives that account for the activities of various types of businessmen.

Analytical Case Problems[1]

Section A: Elements of Production

Area 1. Applications of Blueprint Reading

a. Deep-View Manufacturing Company, Case A

The assembly-room foreman of the Deep-View Manufacturing Company berated the machine-shop foreman for permitting careless workmanship on the part of piece-rate machine operators. A great deal of assembly time was being lost recently in the process of selecting mating parts for various subassembly operations, which had previously gone along without a hitch.

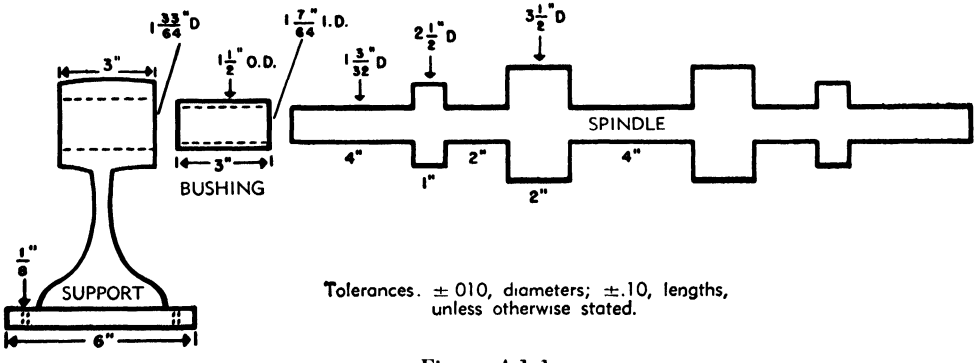
Relations between the machine shop and the assembly room had been reasonably satisfactory until the machine-shop foreman had inaugurated a drive to cut down on rejects within his shop. Time and again the assembly-room foreman had urged the shop foreman to work toward the high side of hole dimensions and the low side of spindle size in operations such as that illustrated in Fig. A.1–1. The shop foreman now refused to cooperate. He stated that he would adhere to his new policy of working toward the low side of hole dimensions and the high side of spindle size so as to minimize the number of spoiled parts within his own department.

He denied that his department was the cause of the assembly department's current troubles. He pointed out that a recent report

DEEP-VIEW MANUFACTURING COMPANY, CASE A

Assembly Drawing of Spindle, Bushing, and Support

(Example of a situation that is prevalent in the assembly operations of the plant is the fitting together of a simple spindle, bushing, and support, which form a small part of a much larger machine -Bushing fits over end of spindle and both in turn are held within the support)



Tolerances. ± 010, diameters; ±.10, lengths, unless otherwise stated.

Figure A.1–1.

[1] Cases in Sections B, C, D, E, F, and G represent actual situations. Cases in Section A, on the other hand, present simplified production situations. They are simulated for classroom use, and are not actual.

compiled by the independent inspection department showed that rejections were now infrequent within the machine shop. This report meant that his men were turning out high quality work, despite the fact that they were working at high speed under the piece-rate payment plan. The machine-shop foreman stated that the company engineer, whose staff prepared the blueprints for both the machine shop and the assembly room, would also verify his contention that quality standards were consistently met by his shop operatives.

The assembly-room workers, who were on a group bonus system, found that, in recent shifts, much valuable time had to be lost while hunting in supply bins for compatible mating parts, which could be assembled readily by hand. The alternative employed was to file down the hole, the spindle, or the bushing so that a fit could be made. (See assembly drawing, Fig. A.1–1.) Some employees made a practice of hunting for compatible parts. Others relied upon extensive use of filing in cases of need. The assembly force was in an uproar about the drop in quality of work in the machine shop. They felt that the shop was endeavoring to beat standard at their expense. The condition in which parts arrived was costing assembly workers a goodly portion of their customary group bonus at a time when peak production was being achieved in other departments of the firm.

Problem: What action should the assembly-room foreman take in an effort to maximize the productivity of his own department?

b. Deep-View Manufacturing Company, Case B

A few months after the incident described in Case A occurred, the inspection-department foreman also had a run-in with the machine-shop foreman. Under the changed conditions that confronted the company as it expanded operations upon accepting emergency military orders, a high rate of spoilage was encountered. A goodly portion of the reject problem was attributable to new machine-shop workers who were still adjusting to the requirements of their jobs.

The practice of shop inspectors in the past had been to throw occasional reject parts into scrap metal bins. On several occasions in recent weeks, however, shortages had developed in the supply of raw materials and in the supply of finished parts needed for military orders.

Spindle Types A, B, and C (see Fig. A.1–2) were typical of parts whose use had expanded greatly. The firm had just a few days' supply of bar stock and of finished spindles of each type on hand. At this juncture, a new employee machined a 100-piece lot of Type A spindles to dimensions that would not pass inspection. A

DEEP-VIEW MANUFACTURING COMPANY, CASE B

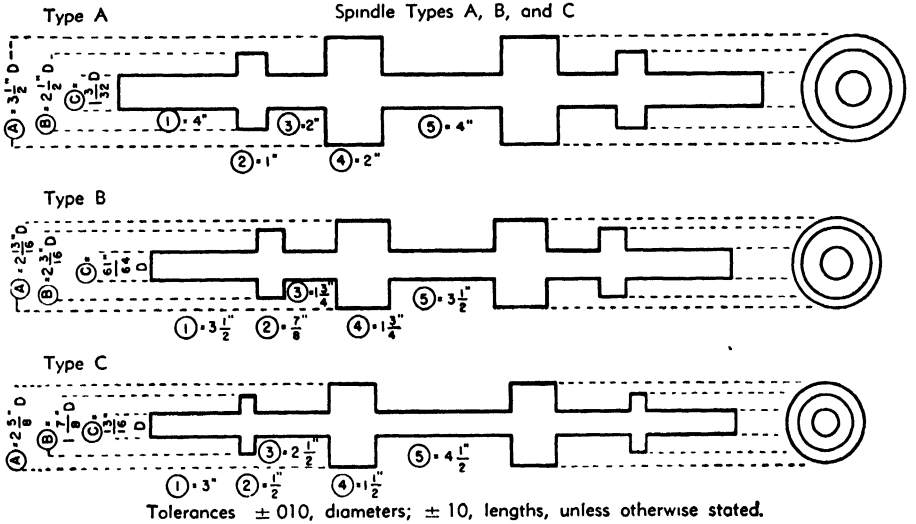


Figure A.1–2.

representative sample of ten pieces revealed the data listed in Fig. A.1–3.

The machine-shop foreman wished to scrap the entire batch, rather than upset his production routine. The shop inspector was inclined to go along with the usual scrap procedure, although it had been devised under different circumstances for occasional defective parts. When the shop foreman placed his new order at the stock room, the inventory man protested that this gross error would throw his stock calculations off, forcing the purchasing department to order more bar stock on an emergency-delivery basis. The purchasing agent backed up the stock-room man in this contention.

The production superintendent stepped in at this point to establish company policy under these new circumstances. He first studied the blueprint (Fig. A.1–2) and the inspection sample report (Fig. A.1–3) to see if some acceptable compromise solution might be found in this case. He was not of a mind to accept inferior work. Yet he did not wish to scrap the time and material that had already been invested in the reject batch of 100 pieces. The superintendent believed that volume was now high enough to make consideration of rework of defective parts feasible. He asked his assistant to study the situation with the supervisors involved and to draw up a report.

Problem: What recommendations do you, as assistant to the production superintendent, wish to make with respect to this reject-rework question?

A.1–3

DEEP-VIEW MANUFACTURING COMPANY, CASE B.

TEN-PIECE SAMPLE OF REJECTED 100-PIECE LOT, SPINDLE TYPE A

	Diameters			*Lengths*				
	A	B	C	1	2	3	4	5
Stated Size	$3\frac{1}{2} \pm .010$	$2\frac{1}{2} \pm .010$	$1\frac{1}{32} \pm .010$	$4 \pm \frac{1}{16}$	$1 \pm \frac{1}{16}$	$2 \pm \frac{1}{16}$	$2 \pm \frac{1}{16}$	$4 \pm \frac{1}{16}$
Observed Inspection Size, Pieces 1-10								
1.	3.543	2.513	1.050	4.12	1.00	2.05	1.81	4.02
2.	3.492	2.494	1.032	4.13	1.00	2.05	1.82	4.00
3.	3.546	2.473	1.046	4.11	1.05	1.94	1.83	4.07
4.	3.567	2.522	1.079	4.14	1.10	2.00	1.77	3.99
5.	3.503	2.509	1.032	4.14	1.12	1.90	1.86	3.98
6.	3.525	2.466	1.029	4.12	1.00	2.07	1.79	4.02
7.	3.552	2.494	1.019	4.12	1.02	2.00	1.79	4.07
8.	3.495	2.525	1.050	4.11	1.01	2.10	1.78	4.00
9.	3.544	2.513	1.031	4.12	1.05	2.04	1.87	3.92
10.	3.503	2.474	1.061	4.15	1.02	2.00	1.85	3.98

Area 2. Applications of Machine Tool Management

a. Machine Tool Exercise A

MACHINING A GROOVED BLOCK ON THE SHAPER

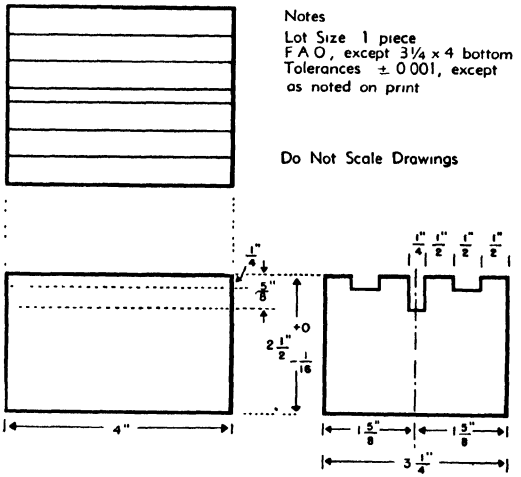
The G.E. job machine shop has received a work order to make Part E-1629, which is a steel block designed to facilitate the placing and holding of other work pieces to be mounted in a shaper vise. (see Fig. A.2–1)

REQUIRED:

1. List in your notebook the surfaces of Part E-1629 that the blueprint indicates are to be machined.
2. Determine the machining operations that are needed in order to perform the work.
3. List these operations in a preferred sequence for accuracy, ease of operation, and efficiency.

4. Fill in the blanks in the operation sheet which accompanies this exercise (construct your own operation sheets in your notebook or use stenciled sheets if available). (see Fig. A.2–2)

GROOVED BLOCK, E-1629



GENERAL ELECTRIC COMPANY	
GROOVED BLOCK, E — 1629	
Scale ½, Mat'l Machine Steel	
Dwn Hart, 2/4/50 Ckd Schaf, 2/6/50 Appd Marx, 2/9/50	E-1629

Figure A.2–1.

b. Machine Tool Exercise B

Machining a Step Spindle on an Engine Lathe

The G.E. job machine shop has received a work order to make Part S-8203, which is a steel step spindle designed to rotate between centers as part of an experimental setup in the field communications section. (see Fig. A.2–3)

REQUIRED:

1. List in your notebook the surfaces of Part S-8203 that the blueprint indicates are to be machined.
2. Determine the machining operations that are needed in order to perform the work.
3. List these operations in a preferred sequence for accuracy, ease of operation, and efficiency.
4. Fill in the blanks in the operation sheet that accompanies this exercise (construct your own operation sheets in your notebook or use stenciled sheets if available. (see Fig. A.2–4)

c. Machine Tool Exercise C

Machining One Hundred Grooved Blocks on the Milling Machine

In tooling up for expanded defense production in 1951, the General Electric Company found that it needed 100 grooved blocks of the type shown in Machine Tool Exercise A. This

STEP SPINDLE, S-8203

Notes.
Lot Size: 1 piece
F.A.O
Tolerances ±0 005

Do Not Scale Drawings

GENERAL ELECTRIC COMPANY	
STEP SPINDLE, S-8203	
Scale ½; Mat'l Machine Steel	
Dwn Tinkers, 3/4/50 Ckd Evers, 3/6/50 Appd. Chance, 3/9/50	S-8203

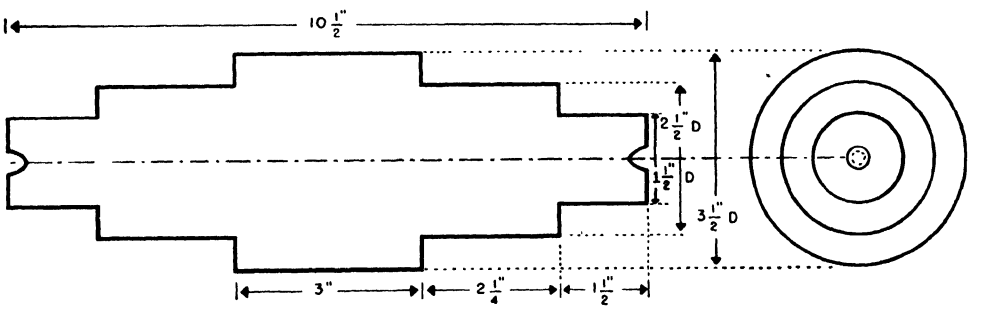


Figure A.2–3.

A. 2-2

Exercise A (Cont.)—Grooved Block, E-1629

NAME .....

OPERATION SHEET Firm ..... Dwg. No. .....

Quan. pcs. Pc. Name. Part No Date ....., 195

OPERATION		MACH.	WORKPIECE SETUP		CUTTING TOOL			"SPEED, FEED. & DEPTH OF CUT"		
						SETUP				
No	Description		No	Description	TYPE	No	Description	DEPTH OF CUT (How Set)	FEED MOTION (How obtained)	CUTTING SPEED (What determines)
1	Rough & Finish 4 x 2½ front surface	Atlas 7" shaper	1	In Vise	Single Point	1	In tool post	Vertical Setting of table and toolslide	Cross motion of table	Feet Per Minute Movement of Ram
2	R & F x rear surface	"	2	Turn 180° in Vise	"	1	"	"	"	"
3	R & F 3¼ x 2½ right end	"	3	Turn in Vise	"	—	"	"	"	"
4	R & F. .x . ..	"	4	. . ..	"	—	"	"	"	"
5	R & F x top surface	"	5	Turn ° in Vise	"	—	"	"	"	"
6	R & F ¼ x ⅝ Groove	"	5	In Vise	Special Form Tool	—	"	Shape of Tool	Vertical Motion of Toolslide	"
7	R & F x	"	—	"	. . ..	—	"	. . ..	. .	"
8	R & F x	"	—	"	"	—	"	"	"	"

Exercise B (Cont.)—Step Spindle, S-8203

NAME .....

OPERATION SHEET Firm ..... Dwg. No. .....

Quan. pcs. Pc. Name: Part No. Date ..... , 195

OPERATION		MACH.	WORKPIECE SETUP		CUTTING TOOL			"SPEED, FEED, & DEPTH OF CUT"		
						SETUP		DEPTH OF CUT (How Set)	FEED MOTION (How obtained)	CUTTING SPEED (What determines)
No.	Description		No	Description	TYPE	No.	Description			
1	Rough & Finish Turn $2\frac{1}{2}$ D one end	Atlas 10" Lathe	1	Between centers	Turning	1	In tool post	Cross setting of cross slide	Longitudinal motion of carriage	Rotation of spindle in R.P.M.
2	R & F Turn $1\frac{1}{2}$ D same end	"	1	"	"	1	"	"	"	"
3	R & F $3\frac{1}{2}$ D	"	—	"	"	—	"	"	"	"
4	R & F Face $3\frac{1}{2}$ D shoulder same end	"	1	"	Facing	2	In tool post	Longitudinal setting of carriage	Cross motion of cross slide	Rotation of spindle in R.P.M.
5	R & F $2\frac{1}{2}$ D shoulder	"	—	"	"	—	"	"	"	"
6	R & F $1\frac{1}{2}$ D end	"	—	"	"	—	"	"	"	"
7	Square $3\frac{1}{2}$ D shoulder same end	"	1	"	Special Form	3	"	Cross setting of cross slide	Longitudinal and cross motion of carriage and cross slide	Rotation of spindle in R.P.M.
8	Square $2\frac{1}{2}$ D, "	"	—	"	"	—	"	"	"	"
9	R & F Turn other end	"	2	Reverse piece end for end between centers		4	"			
10	R & F Turn $1\frac{1}{2}$ D	"	—			—	"	"	"	"
11	R & F Face $3\frac{1}{2}$ D shoulder	"	—	Between Centers		5				
12	R & F Face $2\frac{1}{2}$ D shoulder	"	—		"	—	"	"	"	"
13	R & F Face $1\frac{1}{2}$ D	"	—	"	"		"	"	"	"
14	Square $3\frac{1}{2}$ D shoulder	"	—	"		6	"			"
15	Square $2\frac{1}{2}$ D	"	—	"	"	—	"	"	"	"

GANG CUTTER ARRANGEMENT FOR MILLING GROOVED BLOCKS

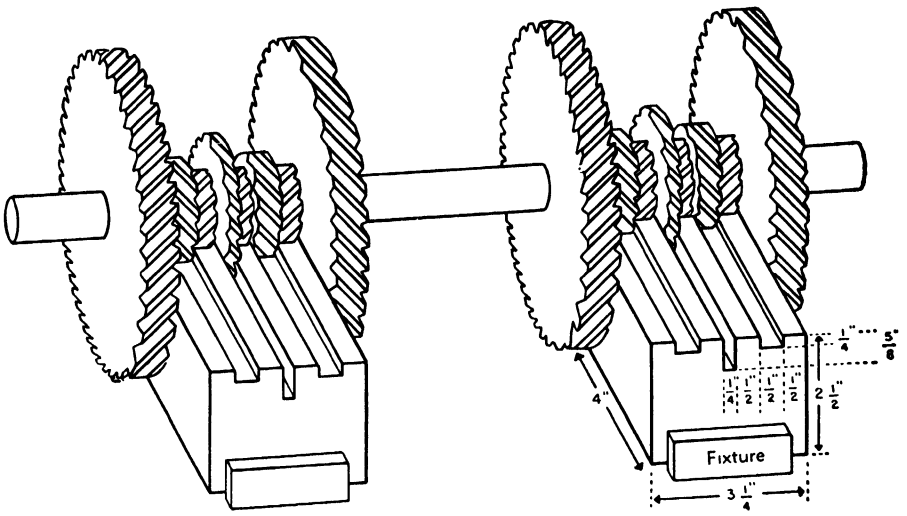


Figure A.2–5.

part was designated as Part E-1629A, and differed from Part E-1629 in that it was not here necessary to machine the 2½ x 3½ ends of the block. The job order called for running the lot on a Cincinnati Milling Machine No. 2, which had a table working surface 52 11/16" x 12½", a longitudinal table travel of 28", and a cross table travel of 10". The machinist set up the blocks on special fixtures arranged in two rows across the table and in five rows along the table so that he could run ten pieces at a time. The equivalent of ten workpiece setups would then enable the machinist to complete the job lot of 100 pieces.

The gang cutter arrangement which the machinist utilized is illustrated in Figure A.2–5. The types of milling cutters he selected are listed in tabular form as follows:

Group	Types of Mills Selected Diameter	Type	Arbor Size	Width of Face	Number required in complete gang mill setup (to be filled in by students in notebooks)
A.	9" D.	Side Mill	1½" hole	¾"	4
B.	4" D.	Plain Mill	1¼"	½"	. .
C.	4½" D.	Side Mill	1½"	½"	.
D.	5½" D.	Side Mill	1¼"	½"	.
E.	2" D.	Spacer (between gang mill sets)	1¼"	3"	. . .

Area 3. Applications of Alternative Metal-Working Processes

a. Rock-Slide Manufacturing Company, Case A

In the spring of 1951, the general manager of the Rock-Slide Manufacturing Company received a memorandum from the production manager in which he recommended that 50 special dies be purchased at a cost to Rock-Slide of approximately $30,000. Use of these dies would enable the firm that supplied the Rock-Slide Manufacturing Company with raw materials to die-cast a number of metal parts

that now required extensive machining by Rock-Slide after being sand-cast by the supplier. Upon joining the Rock-Slide Company six months earlier, the production manager had made numerous changes in the company's manufacturing practices. A majority of these changes were proving to be decidedly worth while. Several of the changes were shortly classified as "premature," however, and the company suffered moderate losses in connection with them.

The general manager and his equipment committee had developed a "rule of thumb" for use in connection with the production manager's numerous proposals. If a proposed expenditure gave promise of paying for itself through out-of-pocket savings within 18 to 21 months' time, the committee was disposed to give a green light to the energetic production manager. If real savings would not offset real costs within this period, and if quality of product was not materially affected, the committee was of a mind to devote the firm's limited capital-equipment resources to other purposes holding forth even greater promise.

The company produced a wide variety of metal products for industrial use. Many of these products were used by customers as parts of larger units of their own design. Rock-Slide also marketed a line of large electronic units under its own brand name for use by industrial firms. Part 2746, Side Housing (See Fig. A.3-1), which was a side piece of metal housing for an industrial electronic unit that Rock-Slide marketed under its own name, was typical of the parts the new production manager wished to have produced by die-casting, rather than by sand-casting.

In sand-casting, a sand mold is fashioned for each piece that is to be turned out by this method. After the metal hardens in the mold, the sand mold is broken up and the rough casting is removed for subsequent machining. In die-casting, a single metal mold may be used to produce hundreds or thousands of accurately dimensioned parts. As soon as the molten metal hardens in the mold, it is ejected by a special mechanism, thereby freeing the die for use with the next piece.

Die-casting has many advantages over sand-casting under favorable circumstances. Die-cast parts require little or no machining for they may be held to relatively close dimensions and take a finish readily. In some instances, the only machining required after die-casting is to trim excess metal off of a small portion of the part. The low-melting-point alloys used in die-casting, such as zinc, aluminum, and brass, are free-cutting metals that may be cut at high speed with relatively long tool life. Die-cast pieces may be intricate in form, and may, therefore, combine several ordinary parts into one new piece. Die-cast pieces range from miniatures, weighing an ounce or less, on up to large pieces weighing 50 pounds and measuring 3 feet in length. Several hundred custom die-casting companies spread over the United States are available to aid manufacturers in

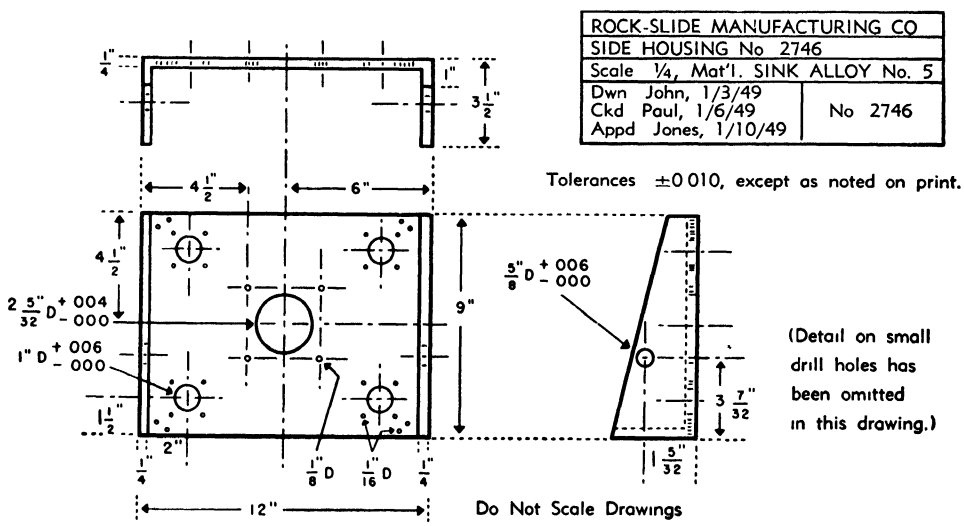


Figure A.3-1.

design of die and in achievement of economical production.

A shop drawing of Part 2746, Side Housing, which was being studied by the general manager in connection with the request for conversion from sand-casting to die-casting, is presented in Fig. A.3–1. A table of comparative costs for manufacture of this part under sand-casting and under die-casting procedures is presented in Fig. A.3–2 below. The general manager and the sales manager found that 6 pieces of Part 2746 were used each month by the company at its current production rate. They anticipated that demand might rise to as high as 10 pieces a month within a short time and hold at that level during the next 2 or 3 years, barring unforeseen product changes or other unsettling events.

Problem: Should the general manager and the capital-equipment committee authorize the production manager to spend $975 at this time for a special die to be used to manufacture Part 2746, Side Housing, by die-casting rather than by sand-casting?

Figure A.3–2

TABLE OF COMPARATIVE COSTS
SAND-CASTING VERSUS DIE-CASTING PROCEDURES

Category of Cost	*Per Piece If Sand-Casting*	*Per Piece If Die-Casting*
Raw Material: Casting (purchase price, delivered)	2.75	1.50
Direct Labor: Machining (finishing holes, trimming to size)	6.20	3.40
Out-of-Pocket, Sub-Total	8.95	4.90
Overhead: Plant Burden (allocated as 120% of direct labor)	7.44	4.08
Total Cost (direct and indirect)	$16.39	$8.98

Note: Only the 5 largest holes were cored in the sand-casting; all others had to be drilled, reamed, and/or bored.

All holes would be cored to reaming size in the die-casting. The thickness of metal to be used in the die-casting would be approximately ½ of that required in the sand-casting. The amount of metal to be removed in the die-casting would be only a small fraction of that to be removed in the sand-casting.

b. Rock-Slide Manufacturing Company, Case B

Ever since the close of World War II the Rock-Slide Manufacturing Company had been producing bronze bushings from bar stock on universal turret lathes. Volume had risen steadily year after year. It was now probable that further substantial increases in demand would result in 1951 from the step-up in national defense orders.

Bronze bushing #5, Part 8241 (See Fig. A.3–3) was used to absorb the wear from movement of a great many mating parts on electronic units, which the company produced both for its own product line and for sale as parts to industrial customers.

The universal turret lathes (See Figure 9–14) on which the bushings were produced were in great demand for use on heavy iron and steel parts, which the company also turned out in great volume. As new equipment of some sort was needed to expand capacity, the management wished to investigate the advisability of shifting the bushing operation to a die-casting machine (See Figure 9–17), rather than to purchase additional turret lathes. The production manager wished to have such a machine on hand for use in casting numerous bronze parts of this general type.

As production demand for this type of bushing was high, several dies would eventually be required to produce sufficient bushings to meet volume requirements. Each die cost $540 and was guaranteed to have a useful life of 30,000 bushings before wearing beyond tolerance points. The bronze alloy, which would be used in the die-casting machine, had slightly less-satisfactory wearing qualities in a dry test than the sand-cast metal. The die-cast alloy was more porous, however, so that oil could more effectively lubricate moving parts. For this reason, wear on the bushing was little more and wear on the iron spindle and iron holder was considerably less than was the case with the sand-cast part. These differences would not be readily apparent to customers. A table of comparative costs of production by the two

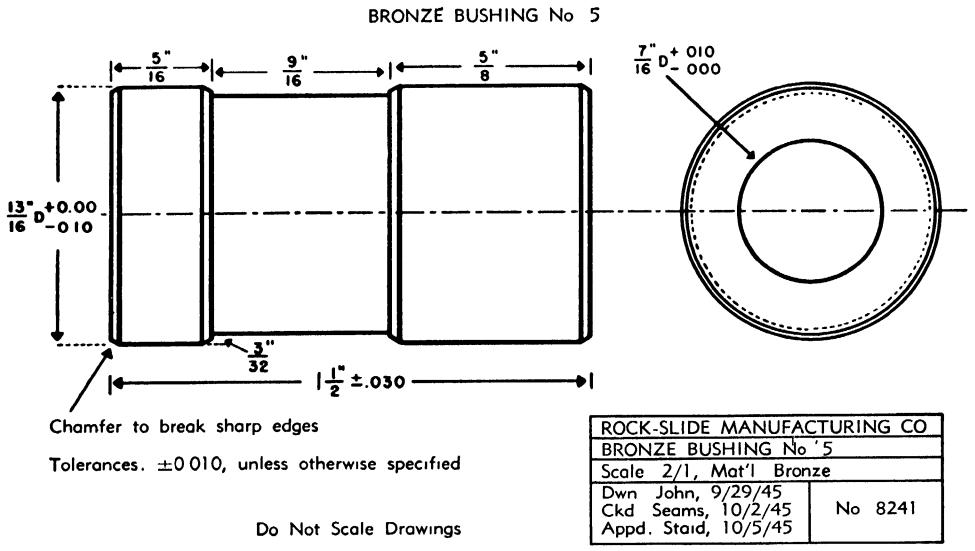


Figure A.3–3.

methods under consideration is presented in Fig. A.3–4 below.

Problem:

1. Under the circumstances described in Case B, do you recommend that a die-casting machine costing $9,000 be purchased to form Part 8241 and other similar parts?

2. What alternative or alternatives might Rock-Slide consider before purchasing a die-casting machine for its own use?

3. Upon an out-of-pocket saving basis, approximately how many pieces of Part 8241 would have to be produced in order to pay for the $540 die?

4. Upon an out-of-pocket saving basis, approximately how many lots of 30,000 bushings would have to be run in order to pay for the die-casting machine from savings on this part alone?

A.3–4

TABLE OF COMPARATIVE COSTS
(PER 1000 BUSHINGS IF 30,000 ARE MADE)
UNIVERSAL TURRET LATHE VERSUS DIE-CASTING PROCEDURES

Category of Cost	*If Bronze Bar Stock on Lathe*		*If Bronze Alloy Die-Cast*
Material Cost	$ 90.00		$40.00
Less Scrap Value (40 lbs. @ .15 a lb.)	6.00	(3 lbs. @ .15 a lb.)	0.45
Net Material Cost	$ 84.00		$39.55
Casting Setup Charge	———	(2 hrs. @ $3 per hr. for 30,000).	0.20
Casting Labor Charge	———	(300 parts per hr. @ $1.80 per hr.)	6.00
Casting Overhead Charge	———	(@ 120% of labor)	7.20
Machining Setup Charge (2 hrs. initial for 30,000 plus ½ hr. tool change every 3,000 pcs., @ $3 per hr.)	0.70	(1½ hrs. initial for 30,000, plus ⅓ hr. tool change every 4,000 pcs., @ $3 per hr.)	0.40

Machining Labor Charge (150 pcs. per hr. @ $2.50 per hr.)	15.17	(450 pcs. per hr. @ $2.50 per hr.)	5.06
Machining Overhead Charge (120% of machining labor)	18.20	(120% of machining labor)	6.07
Total Cost, Direct and Indirect	$118.07		$64.48
Allocated Die Cost	———	(1/30 of $540)	18.00
Grand Total Cost, Per 1,000 Pieces	$118.07		$82.48
Cost Per Piece	11.8¢		8.2¢

Area 4. Motion Economy: Midvale Midget Radio Corporation, Case A

In 1948, the management of the Midvale Midget Radio Corporation, which had enjoyed two decades of successful operation as a 1-product radio manufacturing firm, decided that its future would be more assured if it became identified in some way with television.

The principal stockholders of the firm, Raymond A. Diola and Victor C. Trola, did not wish to launch the Midvale Corporation into full-fledged manufacture of TV sets. They were convinced that midget AM radios, supplemented by midget FM-AM radios and by clock-radios, would provide a satisfactory "extra set" market for many years to come. They did see an opportunity for Midvale to capitalize upon its established name, however, by distributing TV sets that were manufactured by a private-brand television firm, which had recently been located in a nearby town.

In order to develop closer association with the TV field, Midvale management did decide to assemble TV aerials on a relatively large scale. The inventor of a patented attic-installation TV aerial, who worked as an engineer in a nearby aluminum mill, had approached the Midvale owners recently with his TV aerial invention. The aerial was unusually sensitive in pickup and need not be located on the outside of the roof for effective operation. Moreover, the aerial system was shielded against interference patterns arising from metal louvers or other objects, such as pipes and bed springs, which may be found in the average attic. Given reasonable performance, attic TV aerials, of course, have obvious advantages in terms of appearance and ease of installation, as compared with conventional roof-type aerials.

Midvale Radio was interested in this attic TV aerial for several additional reasons. Midvale was well situated to take on this particular product with respect to sources of aluminum supply. Midvale already had a far-flung distribution organization for radio. In its preparations for distribution of a TV line, the marketing of a distinctively different TV aerial was a good opening move. Midvale also had need for a secondary product line in its plant to offset seasonal peaks and troughs in radio assembly. As this TV aerial shaped up as a promising item in all these respects, the Midvale board directed that the proposed move be executed.

In setting up the new assembly line within the existing plant on an off-peak basis, many of the procedures outlined in chapter 10 in plant layout and method standardization were called into play. Other problems also arose that involved worker-instruction, time-study, production-control, and plant-utilization concepts. We shall focus in this current instance, however, upon a simple demonstration staged by the methods engineer for a group of Midvale junior supervisors. These men had enrolled for an intensive refresher course in methods study during the week preceding the actual installation of the new TV aerial assembly line layout. This basic demonstration is well known to methods men everywhere, yet it would seem to bear repeating at this time.

The simple items selected by the methods engineer conducting this class consisted of an aluminum alloy bolt, an aluminum plain-cut washer, an aluminum spring lock washer, and a leather washer. (See Fig. A:4–1.) The winged nut to be screwed to this assembly was shipped separately in the kit for later assembly. The rest of the above items were to be pre-

Midvale Midget Radio Corporation, Case A
Bolt and Washer Sub-Assembly

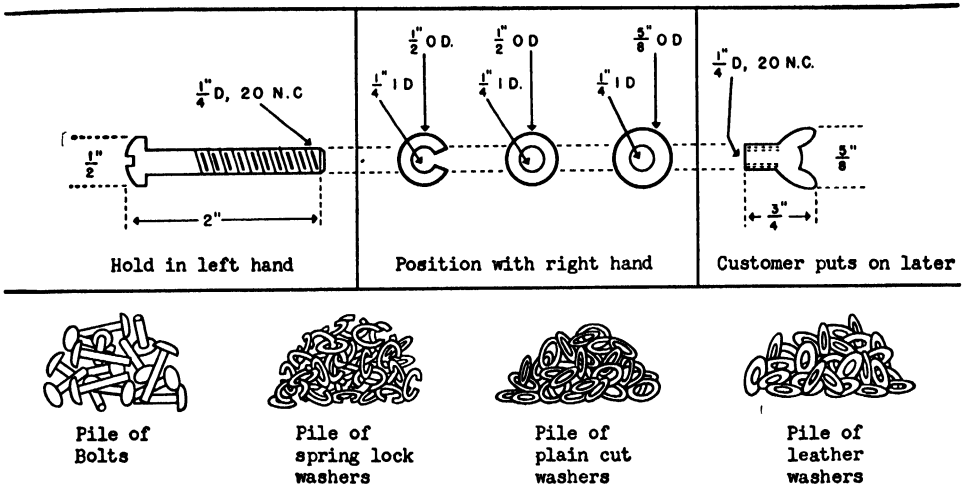


Figure A.4–1.

assembled in the factory, however, in keeping with the firm's advertising program, which stressed ease of home installation.

Upon being asked to assemble these pieces, an assistant foreman from the class 1) picked up the bolt in his left hand, 2) placed the lock washer over the threaded end, 3) placed the plain washer over the same end, and then 4) placed the tight-fitting leather washer over the threads to hold the washer assembly in place. The other supervisors agreed that this simple but inefficient method was all that an operator could be expected to adopt if unaided by mechanical devices.

The supervisors comprising the class then set about devising improvements in method for this assembly on a volume basis, applying the principles of motion economy. As a starter, the methods engineer distributed holding fixtures with countersunk holes drilled in one end, as follows:

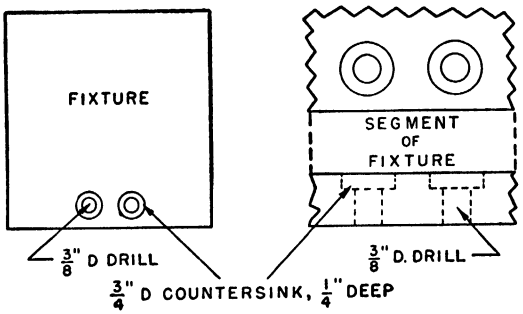


Figure A.4–2.

All of the men caught on to the possibilities thus created for simultaneous, symmetrical, and opposed movements of the arms. Some men left the supplies of bolts, lock washers, plain washers, and leather washers in single piles of each kind. Others divided the piles into left side and right side supply piles, however, and arranged them in an arc as close as possible to the holes in the fixture without unduly crowding the working space available.

The procedure that was universally followed at this stage may be described as follows:

1. Position leather washer in countersunk hole, left hand and right hand.
2. Position plain washer in countersunk hole, left hand and right hand.
3. Position spring lock washer in countersunk hole, left and right hand.
4. Pick up bolt and thrust threaded end through positioned washers, left and right hand.

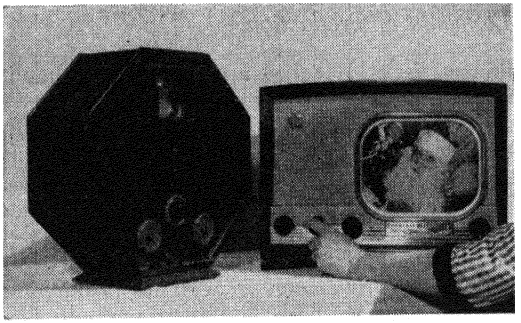
Several of the supervisors suggested to the methods engineer that the countersunk hole should have been made at least ⅜" deep to accommodate the three washers, as the spring lock washer had a tendency to flip out if a fumble was made in the initial thrust with the bolt. After the methods man smilingly shook his head, these men proceeded to devise a final improvement in method for this demonstration assembly. Instead of positioning the spring lock washer by sliding it in normal fashion with the

fingers, they 1) picked up bolts in each hand, 2) thrust them through the lock washers, 3) slid the bolts along the fixture surface with lock washers, attached, and 4) thrust the bolt and washer combinations into the fixture holes. The resulting saving in motions and improvement in accuracy were obvious to all in the class upon demonstration.

Other improvements in feed, in positioning of bolts and washers, and in drop-chute disposal of finished parts were then incorporated in the technique by the instructor. The total output under the new method was fully three times that of the original, tiring method in which one hand was used as a holder while the washers were manually placed on the threaded end one by one.[2]

With ten subassemblies of this typical bolt-and-washer grouping being called for in each TV aerial assembly, the possibilities for savings over the original method through methods standardization and motion economy were bright indeed.

[2] See Professor Franklin E. Folts' "Bagdad Pump Company" Case, IM 1514, in *Elements of Administration: Production*, Volume I, Harvard Graduate School of Business Administration, Boston, 1952, and Professor Ralph M. Barnes' "Motion Study Principles" film, U-919, State University of Iowa, Iowa City, 1952, for similar illustrative motion study cases.



Section B. Industrial Relations

General Electric Company, Case A

A Strike at Electronics Park, September 1950

The case that follows is descriptive, rather than analytical, in approach. The basic analysis of the facts is left to the reader himself. The presentation of publicly reported facts and opinions concerning a conflict situation at G.E.'s Electronics Park plant leaves out the answers to fundamental questions, such as 1) Why was a strike called at Electronics Park in September 1950? 2) What were the basic issues that underlay the walkout? 3) What were the objectives of the union leaders during the conflict? 4) What were the objectives of management during the conflict? 5) Were the union strategy and tactics suited to the attainment of its objectives? 6) Were management strategy and tactics suited to the attainment of its objectives? 7) Did the union succeed in achieving its objectives? 8) Did management succeed in achieving its objectives? 9) Was the settlement of the strike a "reasonable" one that might foster further cooperation by the parties in conflict? 10) What lessons might the union and the management—and the student of industrial relations—learn from this conflict situation?

Photograph at top of page: G.E. labor and management can point with pride to a quarter-century of TV progress, symbolized by pioneer 1926 Alexanderson receiver (left) and mid-century table model at right. (*General Electric Company*)

January 1–December 31, 1950: The General Electric Company reported an all-time record net profit of $173,424,000 for this period. This figure was 38 per cent higher than the 1949 high. Net sales during the year totaled $1,960,429,000, also a record and 22 per cent higher than 1949 figures. A record $97,060,000, or 56 per cent of the net profit, was declared payable as cash dividends on G.E. common stock. This amount, including a special $1 a share dividend, was equivalent to $3.40 a share compared with $2.50 a share declared in 1949. G.E. employment increased to a new peak of 200,419 at the close of the year, and the payroll total rose to $681,040,000.[1]

January 1–December 31, 1950: "The Electronics Park plant of the General Electric Company increased its work force from 7,363 in January to more than 10,500 at the year's end. The annual payroll rose to a rate of more than $30,000,000. . . . The company is considering further building at Electronics Park and in other cities [to meet the mounting demand for both civilian and military electronics products]." [2]

May 19, 1950: "ELECTRONICS PARK 'OPEN HOUSE,' Saturday, May 20, 1950, 9 A.M. to 1 P.M. You are cordially invited to see 'The World Center for Progress in Radio, Television, and Electronics.' . . . SEE FOR YOURSELF . . . How *you* look on television. . . . Where over 8,200 Syracusans earn more than $25,000,000 annually. . . . How a 'Blue Ribbon' quality television set is made

[1] See *The Annual Report to Stockholders* of the General Electric Company for 1950.

[2] Statement by Dr. W. R. G. Baker, Vice President, General Electric Company, in the *Syracuse Herald-American*, December 31, 1950.

and tested. . . . Where a manufacturing plant gives the impression of a 'University of Industry' with a campus-like atmosphere. The employees of General Electric will welcome you as guests on May 20th. GENERAL (GE) ELECTRIC." [3]

". . . Originally arranged as an open house for Electronic Park's employees, families, and friends, the dimensions of the program were extended on suggestion of civic guests. The idea has snowballed and given favorable weather a crowd exceeding 10,000 is expected." [4] [The "atmosphere" was decidedly favorable during this period.]

May 31, 1950: "The C.I.O.'s new International Union of Electrical Workers (I.U.E.) appeared to have won a 5–3 victory among General Electric workers in its battle for power with the old United Electrical Workers Union (U.E.). Agents for the National Labor Relations Board still are tabulating the results of a collective bargaining election yesterday among 91,000 workers at 57 General Electric plants. Leaders of both unions issued statements claiming victory. They have been fighting for worker support ever since the C.I.O. kicked out the U.E. last fall on charges it is Communist tainted and started up the I.U.E. to take its place. An unofficial tabulation of the popular vote . . . showed 52,784 for I.U.E. and 40,616 for U.E. But the election was on a unit basis. The N.L.R.B. set up 121 bargaining units in the 57 plants. There were as many as 5 or 6 units in the larger plants. Each unit is made up of workers with the same general type of job, and each unit selects its own bargaining agent. In some plants the U.E. won the right to represent some of the workers, the I.U.E. the others. . . . I.U.E. won 59 units and U.E. won 33. . . . The outcome still is in doubt in 15 units . . . because no union got a majority. . . . Another 12 units voted in favor of some union other than the U.E. or I.U.E. . . . Six units voted against being represented by any union. . . . Among key plants won by the I.U.E. were . . . Syracuse, N.Y. 4,390 to 255. . . . The C.I.O.'s electrical workers in Syracuse . . . turned in the most decisive right-wing victory of G.E.'s 57 plants. . . . [The ratio here was better than 17 to 1]." [5]

". . . James B. Carey, C.I.O., secretary-treasurer, told a rally of more than 200 G.E. workers here [Cleveland] last night that the United Electrical Workers 'is a dead pigeon today.' Carey, who was president of the U.E. in days before it was expelled from the C.I.O. for alleged leftist leadership, now is chairman of the new International United Electrical Workers administrative committee. The C.I.O. chartered the I.U.E. after ousting the U.E. here at last fall's convention." [6]

June 13, 1950: "International Union of Electrical Workers (C.I.O.) called a meeting of all General Electric employees [in Syracuse] for 2 P.M. at the union hall. For those who attend, it would mean a walkout. Union headquarters said John Brady, Local 320 president, called the meeting shortly after noon. The last such meeting, called as a protest demonstration on Tuesday, took about 4,500 of the more than 8,000 G.E. employees off their jobs. Company officials could not be reached for comment, but plant observers said men began walking off immediately. . . . With 2,400 workers laid off because of an alleged slowdown in one unit, both union and management had been watching tensely for the first move by the other. Company officials said the 50 welders and punch press men, who started a slowdown yesterday, returned to work today. But after being told to 'speed up or get out,' they left. W. O. Johnson, labor relations chief, was in conference with G.E. heads. . . . Meanwhile 2,400 workers in the television receiver assembly line were notified: 'Due to the uncertain state of the punch press operation, we cannot give you definite information on when you will be called back. If the slowdown ends promptly, we may be able to call you back Friday. In any event you will be notified when we have sufficient parts to permit the assembly line to resume operations.' . . . The company said workers in the punch press unit want a pay raise, but the union said it was still seeking the cause of the dispute before it would comment.

"Labor relations at G.E.'s Electronics Park . . . have been turbulent since April. At that time a contract expired between the United Electrical Workers (independent) and G.E.'s 57 plants around the country. The firm refused

[3] Advertisement in the *Syracuse Herald-Journal,* Friday, May 19, 1950.
[4] News article in the *Syracuse Herald-Journal,* Friday, May 19, 1950.
[5] *Syracuse Herald-Journal,* May 31, 1950.
[6] *Ibid.*

to recognize any union as sole bargaining agent because there were two unions competing for the job. (U.E. and I.U.E.). . . . In Syracuse, the firm agreed to deal with any person or unit which [individual] workers wanted as their representatives in any grievance until the National Labor Relations Board certified a permanent bargaining agent. At an N.L.R.B. election last month in Syracuse the right-wing I.U.E. won a thumping 20 to 1 (sic) majority of the workers over U.E. and demanded recognition. But G.E. pointed out that the N.L.R.B. had not declared the election final and said it would continue recognizing any representative the workers asked for. This led to a mass protest walkout Tuesday and, indirectly, to yesterday's layoff." [7]

June 14, 1950: "Syracuse's International Union of Electrical Workers (C.I.O.) blamed a General Electric letter to workers for the protest walkout yesterday of about 4,500 G.E. employees. . . . Harold Martin, Local 320 secretary, said a protest meeting had been planned originally for Monday and then called off after, apparently, all disputes had been settled. . . . 'But then W. O. Johnson (supervisor of union relations) came out with that stupid letter on Monday,' declared Martin, 'and the union members insisted on showing the company our strength. . . .' The first protest meeting had been called because G.E. continued dealing with the U.E. (independent) even though the I.U.E. (C.I.O.) beat that union by more than 20 to 1 (sic) in a labor bargaining vote here recently. . . . Johnson's letter to employees pointed out: 'We cannot consider the results of this election conclusive at this time because just prior to the deadline for filing such charges the U.E. filed a protest of the election with the National Labor Relations Board.' . . . Martin said he took issue with the part of the letter that said: 'Some union leaders have been very critical of the company for continuing this procedure since the election. In fact, we have received reports to the effect that some type of walkout or demonstration is being planned in Syracuse as a protest over this issue.' . . . Martin asserted that this forced the union to have a demonstration. . . . Another point of issue has been the firm's offer of five and a half cents raise to 19 classifications of skilled employees. . . . Martin said I.U.E. Skilled Trades Council in Syracuse turned it down because it discriminated against certain other skilled workmen. . . . The I.U.E. has asked for a meeting next week with management on that issue." [8]

June 17, 1950: "Labor-management relations at General Electric's Electronics Park plant were further clouded today by a National Labor Relations Board announcement that a bargaining agent here may not be certified for many months. . . . An additional layoff of 600 workers yesterday brought to about 3,000 the number made idle temporarily at G.E. . . . Meanwhile, the I.U.E. filed protests yesterday with Governor Dewey, Senator John H. Hughes and Central New York assemblymen to protest the refusal of the Division of Placement and Unemployment Insurance to grant benefits for a period of seven weeks . . . "because an industrial controversy exists in the establishment of your employer." . . . Harold Martin, business agent for the I.U.E., contended the 3,000 workers are not participating in any controversy and are being penalized unjustly. . . . Four employees have formed a committee to obtain signatures to a petition requesting immediate payment of benefits. . . . Company officials have blamed the layoff on the slowdown of 50 punch press operators in its Television Receiver Division, which has brought about a lack of parts. . . . W. O. Johnson, supervisor of labor relations at Electronics Park, said the actual production by punch press operators during the first three days of the week was less than 35 per cent of the normal rate. . . . Executive board members of C.I.O. Local 320, I.U.E., met for several hours yesterday but no announcement was forthcoming after the session." [9] By way of contrast, it may be noted that G.E. management ran a half-page advertisement in the Syracuse newspapers explaining in detail "What's behind G.E. layoff?" The theme of this advertisement was that a small minority group whose earnings compared very favorably with those of other groups was crippling production so as to enforce its wage demands, thereby forcing the layoff of 3,000 other employees for lack of work.[10]

[7] *Syracuse Herald-Journal,* June 13, 1950.
[8] *Syracuse Herald-Journal,* June 14, 1950.
[9] *Syracuse Herald-Journal,* June 17, 1950.
[10] *Syracuse Herald-Journal,* June 16, 1950.

June 19, 1950: "The 3,000 G.E. workers who have been out of work since the start of an alleged slowdown on one assembly line unit may be called back to their jobs. The punch press workers started back after the I.U.E. last night called off a strike that had been announced for 6 A.M. today. Martin Stanton, field representative in Local 320's offices, said the 'union recognition' demonstration was canceled at the request of national officers. . . . I.U.E. heads are in New York City today conferring with G.E. officials on contracts and grievances. . . . Stanton quoted the national union's negotiating committee as saying, 'It is to no one's advantage to have pickets out now.' . . . Local 320 had planned to have the pickets at plant gates this morning. But a company spokesman said they did not appear. . . . 'The international committee said it will take up our grievance with the company immediately,' Stanton declared. . . . The (punch press) operators, who are seeking an increase in their hourly rates from $1.19 to $1.27½ cents, were escorted from the plant by G.E. guards Thursday night." [11] ". . . About 100,000 man hours of work were lost since last week, the company estimated." [12]

June 20, 1950: "The C.I.O. International Union of Electrical Workers has failed in a move to get the General Electric Company to go along with a stop-gap labor agreement pending negotiations. The company turned down the proposal yesterday as it started contract talks with the union. . . . James B. Carey, national secretary-treasurer of the C.I.O. and temporary chairman of the I.U.E.'s administrative committee, sought to have a temporary agreement while negotiations continued on a contract affecting 54,000 General Electric employees represented by the I.U.E. . . . A company statement respecting the proposal said: 'Since the current arrangements as to continuing pay and benefits are being maintained voluntarily, the most progress could be made by going forward first to a discussion of the contract issues.' . . . The company also is carrying on negotiations with the U.E. for the employees it represents." [13]

June 30, 1950: The General Electric Company placed a full-page advertisement in selected newspapers under the caption "WE OFFER." This advertisement summarized in 3,500 words the general statement and highlights of G.E.'s current labor contract offer. The introductory paragraph stated that "for several days now we have been intensively discussing with the committees of the two larger unions the proposals which they have and the ones which we have. . . . In addition we have been studying the more complicated factors, like pensions and insurance, over many months. In connection with all of these, we have not only been taking into consideration the ideas of the various unions involved but have, of course, been studying the situations and observing the trends of settlements by other employers in the various communities where we operate. . . . We came this week to the point where we were ready to make proposals to the various unions. Besides the contract and other items under consideration individually with the various unions, here is an abbreviated summary of the principal economic items we are proposing to make available:"

Captions running through the Offer are listed below

INSURANCE
Increased Life Insurance . . .
Life Insurance after Age 65 (60 for Women) . . .
Accidental Death and Dismemberment Benefit . . .
Weekly Sickness and Accident Insurance . . .
Hospitalization Benefits . . .
Surgical Operation Benefits . . .
Hospitalization Benefits after Retirement . . .
Maternity Benefits . . .
Hospital and Surgical Benefits for Dependents . . .
Contributions by Company and Employees . . .
PENSIONS
Pension upon Retirement . . .
Minimum Retirement Income . . .
Pensions Additional to Social Security . . .
Retirement Age . . .
Vesting . . . (vested right if leave company after 20 years)
Supplemental Payments . . .
Other Pension Benefits . . .
Contributions by Company and Employees . . .
NEW LOAN PLAN
PAY INCREASES
General Increase . . .
LENGTH OF CONTRACT
COST

[11] *Syracuse Herald-Journal*, June 19, 1950.
[12] *Syracuse Herald-Journal*, June 21, 1950.
[13] *Syracuse Herald-Journal*, June 20, 1950.

The Company offered a general wage increase of 3 per cent to be combined with the last general increase of 8 per cent. The contract was to run for 5 years, with an annual wage re-opening provision.[14]

August 8, 1950: "Both I.U.E. and U.E. rejected, June 28, a 5-year contract offered by the General Electric Company. . . . On July 8, the I.U.E. accepted a 3 per cent wage increase, but did so 'with no strings attached.' Its president, James B. Carey, said at that time that the union wanted a further boost 'in keeping with the corporation's phenomenal profits. . . .' Production workers at General Electric Company's Electronics Park will take a strike vote August 18 as part of what a union official calls a nationwide plan to force a contract settlement. John Brady, president of Local 320 . . . said it was part of a C.I.O. plan to strike in 41 G.E. plants August 21, if agreement on a new contract were not reached by that time. . . . Harold Martin, Local 320 secretary and a member of the national bargaining committee, said that negotiations which have been going on with the firm for several weeks in New York City broke off last Friday. . . . The union leader said I.U.E. is demanding a 10-cent an hour general wage increase and a $125-a-month pension plan which the employees do not contribute to. 'The company refused to give us any substantial wage increase,' Martin said. 'The contract they offer us is inferior to the previous one. . . .'

". . . The company apparently has expected a strike since last week. Its latest Employee Relations News Letter warned, 'You may this coming week see some attempts again at the type of pay-losing work interruptions which we had occasionally last spring, and which are customarily used as a build-up for a more serious effort to get employees out for a prolonged period. . . .' The firm also declared: 'The burden of I.U.E's argument is now admittedly that it just doesn't count whenever we willingly offer or put into effect any benefits that do not publicly appear to have been wrung out of us by the union.' Officials at Electronics Park declined to comment further." [15]

August 15, 1950: The General Electric Company placed a full-page advertisement in selected newspapers under the caption "TO STRIKE—OR *NOT* TO STRIKE?" The advertisement discussed "strike threats" and "strike facts." It stated that "a vote for a strike is usually sold to members as just a *threat* to be held over management to gain by *force* something not available through calm and orderly negotiation." It went on to state that "the hard fact is that a vote *authorizing* a strike has usually meant that there *would be* a strike . . . and such strikes to force unwise settlements tend to be long and otherwise unfortunate." [16]

August 19, 1950: A G.E. advertisement in the Syracuse newspapers asked the headlined question "WHY SYRACUSE FIRST?" It pointed out that "leaders of I.U.E. Local 320 announced Friday night that employees of the local G.E. plants had voted in favor of a strike" [85½ per cent reported to have voted 'yes']. The advertisement asserted that "similar strike votes have not been conducted at the other G.E. plant locations where I.U.E. represents groups of employees who are also involved in the same New York negotiations." The ad left with the reader this question: "Does this mean that our employees at Syracuse have been selected by either local or national officers to bear the brunt of I.U.E. strike action against General Electric, and to be subjected to the loss of earnings and loss of buying power that goes along with any strike?" [17]

August 21–24, 1950: The General Electric Company ran a series of three full-page advertisements in Syracuse newspapers dwelling upon 1) the substantial nature of the new G.E. "Security Package" and pay increases already offered by the company in the current contract negotiations, 2) the need for G.E. employees who have misgivings about a long and costly strike to make their feelings known to their friends, associates, and union leaders, and 3) the company's belief that top I.U.E. leaders, and local union leaders as well, "are not so much interested in getting something more for their membership as they are in getting some special glory for themselves—something which will make them appear bigger and more important than other union leaders." The wind-up advertisement of the series included a state-

[14] *Syracuse Herald-Journal,* June 30, 1950.
[15] *Syracuse Herald-Journal,* August 8, 1950.
[16] *Syracuse Herald-Journal,* August 15, 1950.
[17] *Syracuse Herald-Journal,* August 19, 1950.

ment that "in the meantime, we can all expect the union to intensify their smear campaign against the Company. G.E. management undoubtedly will be called unreasonable, dishonest—and worse. This is to be expected as a part of the union strategy at a time like this. We are sure that you, knowing the facts, will understand the motives behind these charges and will know just how seriously—or how lightly—they should be taken." It repeated the question: "Is this kind of glory for *them* worth the price—when *you* have to pay for it?" [18]

August 31, 1950: "Harold Martin, business agent for Local 320, C.I.O. United Electrical Workers, today issued a call for a strike at 4 P.M. at the General Electric Company's Electronics Park. Martin, in New York City attending G.E.-C.I.O. negotiation sessions, said . . . The walkout would bring to nearly 30,000 the number of C.I.O. workers on strike against G.E. Some 20,000 workers struck yesterday at five G.E. plants in the Lynn, Mass., area. . . . Previously the company here had announced at noon today that 3,300 assembly line workers, idled by the strike at Tell City, Indiana (television tube plant) would return to work tomorrow. . . . At Tell City, about 1,400 workers there returned to work this morning, ending their demands for a 40-hour week. It was announced the C.I.O.-International Union of Electrical Workers accepted a company ultimatum for continued operations on a 10-hour day." [19]

September 5, 1950: "Dr. W. R. G. Baker, General Electric vice president and general manager, announced at noon that all Syracuse plants of the Electronics Department, including Electronics Park, are being closed today at the end of the first shift because of 'acts of violence on the part of striking members' of the union. Baker's statement followed reports that a union official, three other pickets and two sheriff's deputies were injured when they were hit by automobiles at the Electronics Park plant. The company official said 'even though many hundreds of General Electric workers have shown, by coming to work, that they consider this strike to be unnecessary, I feel that we cannot subject our workers to personal injury and property damage from the fists and feet of irresponsible hoodlums. There has been brought to my attention reports of women workers, some scarcely out of their teens, not only being threatened and subjected to profane and abusive language, but manhandled also. In addition, many automobiles were damaged. . . . Since this law enforcement agency cannot protect those men and women who wish to work, I feel in order to safeguard our loyal employees we have no recourse but to close the plants until further notice. . . .'"

"John Brady, president of Local 320 . . . suffered cuts and bruises and was driven home, his office reported. They said he was struck by a car attempting to enter the plant. . . . An ambulance brought three other men to the hospital suffering minor injuries . . . they had been on picket duty at the factory when a car leaving the plant ran them down. . . . Two sheriff's deputies . . . also were reported knocked down and slightly injured. . . . They remained on duty. . . . Observers said that about 100 pickets milled about the main gate."

"John Stanley, recording secretary for Local 320, said . . . 'Very few production workers passed through the picket lines this morning—fewer than 100. . . . We are expecting results. The strike is very effective.'

"Earlier yesterday, Dr. W. R. G. Baker . . . sent out 8,500 special delivery letters to G.E. salaried employees. The letter pointed out there are 'definite legal restrictions designed to govern the conduct of pickets . . . the union and its pickets do not have the right to interfere by violence or threatened violence with the attempt of anyone to enter the plant. . . .' The letter then asked employees to make a 'sincere effort to return to work.'"

"Earlier Harold Martin, union business agent for Local 320 . . . announced that government intervention in the G.E. wage dispute would not halt continuation of the strike here. . . . The last-minute government plea for war production apparently had staved off a nationwide C.I.O. strike against G.E. plants . . . unsettled was a preliminary walkout of 23,000 men that stalled production at several eastern G.E. plants, including Syracuse. . . . The Government move—a formal request for delay from Cyrus Ching, head of the Federal Mediation Service—came yesterday after a rank and file revolt against the strike call on the part of some locals. . . . It brought the charge from G.E. that the administration had acted to 'save

[18] *Syracuse Herald-Journal*, August 21, 22, 24, 1950.
[19] *Syracuse Herald-Journal*, August 31, 1950.

face' for James B. Carey, administrative chairman of the C.I.O. International Union of Electrical Workers who had called the strike. 'Carey's strike call was apparently a total failure,' said Lemuel R. Boulware, G.E. vice president for employee relations . . . Boulware said Carey had 'continuously boasted' of having high administration officials 'in his vest pocket.' . . . One of Carey's aids called Boulware's statement 'rubbish.' Carey said he would not comment on it." [20]

The General Electric Company ran a full page advertisement in the September 5 newspapers under the caption "ALL OF THE PEOPLE . . . SOME OF THE PEOPLE." The theme developed in this ad was that, while the union leaders called for a strike of all the G.E. employees in the I.U.E., only half of the people were "fooled" into thinking that the strike was justified.[21] Other full page advertisements by the Company during the early strike period asked "DOES THIS STRIKE MAKE SENSE?",[22] used photographs of picket violence in "PLACING THE BLAME," [23] used photographs of damage in asking union leaders to pay "THE PENALTY OF POWER," [24] pointed out that plant reopening after extensive strike damage takes considerably "MORE THAN THE FLICK OF A SWITCH," [25] asked the "hard-boiled" question "WHAT'S HAPPENING TO *YOUR* JOB?",[26] and raised "THE $555,000 (NOT $64) QUESTION" of wages lost by Syracuse G.E. employees while other I.U.E. plants go on working.[27]

Meanwhile, the local newspapers gave other coverage to the strike in the form of news articles, feature stories, photographs, letters from subscribers, interviews, and editorials. News articles reported the situation in New York and Washington, and in G.E. plant cities throughout the nation. Feature stories covered such items as "sugared" gas tanks, delayed defense contracts, delayed pay checks, and the crossing of picket lines by pay department employees. Numerous photographs covered the adventures of union pickets and exhibited their handiwork in the form of human injury and property damage.

Typical letters from subscribers denounced the strike pickets for unlawful actions and denounced the uniformed deputies for failure to protect rights. Interviews with community leaders, such as President John T. Schenck of the Manufacturers Association of Syracuse, established the fact that Syracuse was losing its good reputation as a city of labor peace. Editorials contrasted the Korean war sacrifices by our troops and the cowardly letting down of our country by "goon squads" and "pug-uglies wielding blackjacks," although they refrained from taking a stand on "the minor matters at issue." [28]

September 7, 1950: "Federal mediators today renewed efforts to settle the General Electric Company's dispute with the C.I.O. International Electrical Workers Union after reporting no progress at initial talks. . . . The prospect of prolonged negotiations was raised by Lemuel Boulware, G.E. vice president and chief management negotiator. He said it might take 12 or 13 days more to tell the company's story, judging by the pace of yesterday's negotiations. . . . Shunted aside temporarily was a suggestion by James B. Carey, the union's chairman, that President Truman name a fact-finding board to recommend settlement terms. . . . Boulware said the company was opposed for several reasons, including: First, the dispute is neither companywide nor industrywide; second, there is no national emergency because none of G.E.'s 'critical' war contracts is affected; and third, the precedent would spur strikes against war contractors since unions would be encouraged to bring their dispute to Washington instead of bargaining. . . . Boulware said that military contracts . . . in plants shut down by the I.U.E. strike [are not] considered to be in the critical class, from the standpoint of defense importance or immediacy of delivery date. . . .

"James B. Carey, administrative chairman of the I.U.E., said that . . . the union is asking

[20] *Syracuse Herald-Journal*, September 5, 1950.
[21] *Syracuse Herald-Journal*, September 5, 1950.
[22] *Syracuse Post-Standard*, September 5, 1950.
[23] *Syracuse Herald-Journal*, September 6, 1950.
[24] *Syracuse Herald-Journal*, September 7, 1950.
[25] *Syracuse Herald-Journal*, September 8, 1950.
[26] *Syracuse Herald-American*, September 10, 1950.
[27] *Syracuse Herald-Journal*, September 11, 1950.
[28] *Syracuse Herald-Journal*, September 7, 1950.

for a 'package' of contract concessions totalling 15 cents an hour. The company has offered the equivalent of a 10-cent hike, but has refused to assume the employees' share of hospital and pension plans. Carey said there were many more issues, such as liberalized vacations, two additional paid holidays each year including Election Day; restoration of cost-of-living wage increases and a profit-sharing program, both of which were dropped when the company granted other wage demands a few years ago." [29]

September 9, 1950: "The G.E. negotiating returned to New York [from Washington] last night when two days of futile talks with the C.I.O. Union of Electrical Workers ended in a stalemate. The union placed quarter-page ads for display today and tomorrow in newspapers in cities where G.E. plants are located. The ads announce I.U.E.'s 'acceptance' of what the union called a settlement offer made in company advertisements carried earlier this week. The 'acceptance' already had been rejected by G.E.'s negotiators here. They said the union made a 'trick interpretation' of an ad which described the company's last wage and pension offer. . . . The by-play over the union's settlement 'acceptance' . . . was based on a sentence of the company ad which said the total wage offers made, plus the improved pension program is 'obviously worth 25 cents to 43.5 cents an hour.' Carey said he had offered to settle for a wage-and-welfare package equivalent to the lowest figure, 25 cents. But Boulware said the figures in the advertisement included total pension benefits, both those now existing and those offered in the present talks. He said the stated value represents the cost of the annuities if bought individually by the workers."

". . . C.I.O. electrical workers today accused the General Electric Company of provoking the present 11-day-old strike at Electronics Park and said the firm would not cooperate in admitting maintenance and pay roll personnel. Local 320 I.U.E. (C.I.O.) said it attempted to agree with the firm on the number of maintenance, supervisory and payroll people necessary to keep the plant maintained. 'In answer to the union's request,' said Mark Clancy, a Local 320 official, 'W. O. Johnson (labor relations director) said he was not interested in any such meeting. We feel that Johnson's statement was just a reiteration of the company's arrogance during the last three months of negotiations.' . . . Johnson could not be reached for comment. . . . Clancy declared that the electrical firm's 'propaganda and full page advertisements have constituted a deliberate provocation to strike.' . . . 'Newspaper stories published declaring that the I.U.E. plans sabotage,' he said, 'are vicious fabrications. General Electric might welcome, for its own propaganda purposes, such action. But our union has a deeper sense of social responsibility in this respect than has the corporation.' " [30]

September 12–14, 1950: General Electric counter-attacked the union with three additional full-page advertisements under the captions of 1) "THANK YOU," [31] in which the company expressed "gratitude" to the union for bringing up the subject of how good the G.E. offer really is, 2) "FALSE PROPHETS AND REAL LOSSES," [32] in which heavy losses in labor wages, labor respect, and community status are stressed, and 3) "TRUE OR FALSE," [33] in which the worker may check as "true" such facts as a) that Syracuse G.E. employees have lost $780,000 in wages, b) that most other G.E. employees are still working, and c) that Syracuse workers will receive, as the result of national negotiations, no more and no less than employees at other locations.

September 15, 1950: "The C.I.O. Electrical Workers and General Electric Company today agreed on contract terms to end a strike of 40,000 workers threatening to spread throughout the company's 116 plants. Affected by the agreement are 9,500 Syracuse workers who have been idle for 15 days. The agreement calls for a 10-cent hourly wage increase, about half of which already has been in effect since July 1, and a cost of living wage increase arrangement following the pattern set by the C.I.O. Auto Workers and General Motors. . . . Election Day will be a paid holiday. . . . The new C.I.O. contract arranged here at Govern-

[29] *Syracuse Herald-Journal*, September 7, 1950.
[30] *Syracuse Herald-Journal*, September 9, 1950.
[31] *Syracuse Herald-Journal*, September 12, 1950.
[32] *Syracuse Herald-Journal*, September 13, 1950.
[33] *Syracuse Herald-Journal*, September 14, 1950.

ment-sponsored mediation sessions includes pensions and insurance plans . . . to which employees will contribute.[34]

September 16, 1950: "Whether C.I.O. electrical workers in Syracuse General Electric plants return to work next week will be decided tomorrow night at the Civic Theater. Local 320, I.U.E., called a meeting of all its 4,000 members to vote on the agreement reached yesterday in Washington with G.E. Meanwhile, Mark Clancy, chief steward, said the union was attempting to arrange a meeting with the firm to iron out several important local grievances prior to a back-to-work movement. He said they were: One. A definition of what contitutes temporary layoffs. Two. Seniority in laying off employees. Three. Piece work rates. Clancy said the company now bases piece work pay on weekly averages, making it possible for a worker to lose at the end of the week what he gained at the start. The union is demanding a guaranteed job rate which would give workers the same rate as if not on piece rate. Clancy warned that the local members have to approve the new contract before it becomes applicable to Syracuse." [35]

"Dr. W. R. G. Baker, G.E. vice president and general manager of Electronics Park . . . issued this statement: 'General Electric is notifying about 2,000 production and maintenance workers to return to work at the Electronics Park and Thompson Road plants Monday provided that the local I.U.E. Union ends the strike at its membership meeting it has called for Sunday night in the Civic Theater. . . . We regret that the majority of production workers cannot be called back to work immediately the strike is over because production and supplies have been seriously disrupted. . . . I would like to repeat that hourly-paid workers are not to return to the Syracuse plants until individually notified." [36]

"James B. Carey, chairman of the administrative committee of the I.U.E., which called the strike of 40,000 workers, said the strike settlement plan was approved unanimously at a closed meeting [of the I.U.E. conference board]. He said most union locals will meet today to consider the settlement plan and predicted they will approve it by landslide votes." [37]

September 18, 1950: "C.I.O. electrical workers in Syracuse stunned the arm-chair experts last night and voted by a huge majority against returning to work at Electronics Park. About 1,500 members of the International Union of Electrical Workers (C.I.O.), in a meeting at the Civic Theater, decided that the contract signed between their national union and the General Electric Company did not settle local issues. . . . At the end of an hour and a half session that John Brady, president of I.U.E. Local 320, described as 'somewhat stormy,' the electrical workers voted about two to one in favor of continuing the strike that has kept G.E. from producing since September 5. Brady said the members were not satisfied with the agreements reached on temporary layoffs, piece work rates, higher pay for skilled trades and posting of jobs for bidding. The local union, which spearheaded the I.U.E. strike against the big electrical firm, realized that all that had been gained in their 18-day-old strike was a cost-of-living provision. The national agreement granted workers also a 10-cent hourly wage boost . . . seven paid holidays and some pension and welfare benefits. But all of these, except for the cost-of-living clause, had been offered by the company before the strike.

"In paid advertisements again today the company asserted that the strike has cost workers $1,000,000 (THE MILLION DOLLAR BLUNDER. See Figure B–2). They pointed out that all other G.E. locals on strike agreed to accept the national contract and return to work. The union, however, repeated this warning that the advertisements are only angering union members. 'These company statements are only prolonging the strike,' said Harold Martin, Local 320 business agent. 'They're succeeding only in working our people up to a higher pitch.' Both union and company said, meanwhile, that there were no immediate plans for local peace talks. Dr. W. R. G. Baker, G.E. vice-president, said he would make no appeal for non-strikers to return to work. . . . The union, however, announced that picket lines would be strengthened. . . ." [38]

[34] *Syracuse Herald-Journal,* September 15, 1950.
[35] *Syracuse Herald-Journal,* September 16, 1950.
[36] *Syracuse Herald-American,* September 17, 1950.
[37] *Ibid.*
[38] *Syracuse Herald-Journal,* September 18, 1950.

the MILLION DOLLAR BLUNDER

The strike against the Syracuse plants of General Electric now has cost production workers $1,000,000.

The strike was totally unnecessary. The continuation of the strike, we believe, is a serious and costly blunder resulting from hot-headed tactics by a few irresponsible union leaders who lack any regard for the well-being of the members of the bargaining unit.

Nothing can be settled by remaining on strike that could not and cannot be settled after returning to work. Nothing can be settled by remaining on strike that could not and cannot be settled over the bargaining table.

All other IUE local unions in other locations, some of which also have local issues to be ironed out, have returned to work. All other General Electric plants are open. All other G-E employees at all other locations again are earning full pay and receiving the total of the 10 cent increase provided in the agreement signed by the Company and the national union last Friday.

Must this million dollar blunder continue until it becomes a two million dollar blunder, or a three million dollar blunder, or more?

To our employees we say: We were forced to close the Syracuse plants because of union violence. We still want to open them. Do you want to work?

GENERAL ELECTRIC

Electronics Department, Syracuse, N. Y.

Listen to the General Electric News Broadcast Daily Over WAGE, 620 on Your Dial, at 6:25 P.M. (Sunday 5:55 P.M.)

Figure B–2.

September 19, 1950: For the first time in the campaign, General Electric ran a *2-page* advertisement in the local newspapers. The theme of this ad was summarized in the caption "GENERAL ELECTRIC EMPLOYEES SAY—'LET'S GO BACK TO WORK!'" The backdrop for the Company's message was a 2-page photographic spread of letters addressed to Dr. Baker. The message itself stated that the firm was flooded with replies to Dr. Baker's earlier letter which asked "Do you want to work?" The message asserted that "Every single letter said, 'I want to go back to work.'"

The message reminded workers that "one of the local union leaders is quoted in the Syracuse press as saying 'Company statements' have only succeeded in stirring 'our people to a higher pitch.'" It continued: "With the evidence in front of us in the form of this flood of letters, we agree our employees have been stirred to a high pitch—of resentment—against the hot-headed tactics which resulted in the Syracuse strike, the picket line violence and, now, the unnecessary and lengthy continuation of this costly work stoppage. . . . We deeply appreciate our employees' writing to us. . . . But we feel if they wish to make their feelings known to the leaders of the union responsible for their not working, and perhaps where it will do the most good, that they write to the following persons:

John Brady, president
or Harold Martin, business agent
or Mark Clancy, chief steward
at Local 320, I.U.E.,
104 Magnolia Street,
Syracuse, New York.

These are the men who control their destiny." [39]

September 21, 1950: Local Union President John L. Brady answered the Company's 2-page "LET'S GO BACK TO WORK" spread with a half-page newspaper advertisement labeled "OPEN LETTER TO DR. W. R. G. BAKER." [40] The letter is reproduced on page 435 as Figure B–3.

September 23, 1950: "Dr. W. R. G. Baker, G.E. vice president, answered the union's demand for public bargaining sessions by saying that the local wants to avoid a company-wide election. . . . 'The union's conditions,' said Dr. Baker, 'would not only cause a lengthy delay in the taking of any ballot, but probably would result in an unending debate of emotion-charged claims.'" [41]

The General Electric Company continued to run full-page advertisements daily during this period under captions such as "G.E. WORKERS IN SYRACUSE HAVE NOW CONTRIBUTED $1,110,000 AND WHAT HAVE THEY GAINED?",[42] "WHY SYRACUSE LAST?",[43] "A FURTHER REPORT TO OUR EMPLOYEES" [44] and "THE VOTE THAT ISN'T CAST—*DOESN'T COUNT!*" [45]

Meanwhile, other steps aimed at ending the strike were being formulated. They were reported in the local press as follows:

"It appeared today that the I.U.E. (C.I.O.) would make a supreme effort to get its striking members back to work at the General Electric Company. Local 320, I.U.E., announced that James B. Carey, international chairman, will address union members at 3 P.M. tomorrow at the Civic Theater. . . . It was understood that Carey would urge Syracuse G.E. workers to call off their walkout for the good of national union solidarity. John Brady, Local 320 president, who made the announcement . . . pointed out that he now has a signed statement from Clyde Harrison, company labor relations director, that the firm agrees to negotiate all of the local issues presented by the union at its Monday conference with G.E. Previously, Brady said, G.E. refused to consider any of the local proposals. . . . The company admitted it had given the union that signed statement but added that it has always been willing to negotiate local demands. Today is the 23rd day of the strike here." [46]

September 24, 1950: "The General Electric

[39] *Syracuse Herald-Journal,* September 19, 1950.
[40] *Syracuse Herald-Journal,* September 21, 1950.
[41] *Syracuse Herald-Journal,* September 23, 1950.
[42] *Syracuse Herald-Journal,* September 20, 1950.
[43] *Syracuse Herald-Journal,* September 21, 1950.
[44] *Syracuse Herald-Journal,* September 22, 1950.
[45] *Syracuse Herald-Journal,* September 23, 1950.
[46] *Ibid.*

OPEN LETTER TO DR. W. R. G. BAKER

Vice President, General Electric Company

INTERNATIONAL UNION
of
Electrical, Radio and Machine Workers
Affiliated with the Congress of Industrial Organizations
104 Magnolia Street
Syracuse 4, N Y

September 20, 1950

Dr. W. R. G BAKER,
Vice Pres., General Electric Co.
Electronics Park,
Syracuse, N. Y.

Dear Sir·

We are in receipt of your letter of September 19, 1950, in which you incorporate your offer of a vote to return to work by secret ballot of Union members and non-members alike.

We appreciate your interest in the manner in which our members run our Union. We are also deeply touched over your concern for the personal welfare of all your employees. It is not often that a billion-dollar corporation such as General Electric effects such an interest in the well being of Union members. Since however, you have evinced such an amazing interest in the possible lessening of many hardship cases (which you say have come to your attention), we are prepared, as we have been in the past, to accept any decent proposal you may have to offer.

As we indicated to your so called "Negotiating Committee" (Your interest presumably does not sufficiently recognize the need for you to attend any meeting with the representatives of your employees) we accept your somewhat unique "offer", providing, of course that non-members of the Union are given an opportunity to acquaint themselves with the issues involved in the present dispute.

We propose therefore that before any such vote is taken, a few days of actual negotiating be entered into by both the Local Union and a Committee of your representatives and that such negotiations be conducted in any one of the following manners:

1—That negotiations be conducted under a microphone so that all interested parties can listen via their radio. The Union will bear the expense.

2—That negotiations be conducted in quarters large enough to allow interested parties to attend and listen.

3—That a group of neutral persons of unquestioned integrity be asked to attend the negotiating sessions and make a public report of their findings.

It is our feeling, Dr. Baker, that you will not accept any of the above proposals, made in all honesty and good faith. Why do we make this statement? Because we believe you, Dr. Baker, are entirely aware that conditions in your Syracuse Plant will not stand the light of day Despite the fact that you refuse to submit yourself to the indignity of meeting with the committee of your employees and despite the fact that you already know of these conditions, we will, nevertheless outline a few of them for you.

1—ONLY IN THE SYRACUSE PLANT does GE refuse to abide by ANY FORM OF SENIORITY affecting layoffs and rehiring.

2—ONLY IN THE SYRACUSE PLANT does GE refuse to pay a decent rate to its skilled Tradesmen.

3—ONLY IN THE SYRACUSE PLANT do sweatshop conditions exist to such an extent that girls are EVEN NOW incapacitated because of nervous breakdowns (you must surely be aware of the girls who were carried out of the plant because of excessive fatigue.)

These are just a few of the "Local Issues", that resulted in prolonging the strike against GE in Syracuse.

In view of the deep concern you must feel over these issues, Dr. Baker, we are quite sure that you will instruct your committee to at least listen to the Union negotiators and refrain from falling asleep at the bargaining table.

If you feel the concern you so publicly and so costly declaim, perhaps you will deign to meet with the elected representatives of your employees and instead of full page ads and misleading propaganda ventures, you will sit down and bargain in good faith to end this strike you so loudly deplore.

Sincerely yours,
JOHN L. BRADY,
President,
Local 320 IUE-CIO

Figure B–3.

strike is over in Syracuse. About 900 members of Local 320, I.U.E. (C.I.O.) yesterday at 4:15 P.M. at the Civic Theater voted unanimously to go back to work. . . . The standing vote yesterday came after a fiery 50-minute speech by James B. Carey, international chairman of the I.U.E., who urged the members to vote. . . . Carey laid the blame for the extended Syracuse strike squarely on the shoulders of the company. He accused Dr. W. R. G. Baker, G.E. vice president in charge of local plants, with conducting 'psychological warfare' against the union. He said the firm had advertised all over the nation before the national settlement and that the union started proceedings against the company with the Federal Trade Commission. By contract agreement, Carey said, he withdrew the complaint. 'But if the Syracuse ads continue,' he said, 'we will take this case to the Federal Trade Commission.' '. . . I want you to go back to work,' he said. 'But we're hell bent on eliminating interference from the outside.' This brought resounding applause. . . .

"Carey also touched on some delicate points of dissension within his own ranks. He acknowledged that when he called for a strike only 32 of 49 I.U.E. locals went out. 'It must have been difficult for you to understand why in other locals we didn't get the response that we got here,' he said. He dropped the subject at that point. The Syracuse local was one of the first to walk out when Carey called for a national strike. Carey thanked the members for their militancy. 'We wouldn't have a union in G.E. if it hadn't been for the workers in Syracuse,' he said.

"A statement [a full-page ad captioned 'MEN AT WORK'] released by the company which had been anticipating a back-to-work movement said: 'It is gratifying to be able to announce that we will reopen the Syracuse plants immediately, and we hope that we can have almost all, if not all, of our employees back on the job by the end of the week. . . . Unfortunately, the effects of the strike will be long felt. Nearly one and a half million dollars in wages have been lost to the employees and the community. What the cost of the strike will be to General Electric cannot even be estimated. We will make every effort to recapture as much of the losses for our employees and for the company as is humanly possible. To do so, we will attempt to schedule all the overtime work that we can. In this manner we may be able to make up some of the lost ground and catch up on our schedule of vital defense material for our armed forces. At the same time the added pay will help our employees to make up for at least part of the loss they sustained during the unnecessary strike.' " [47]

October 11, 1950: "A faction of Syracuse Local 320, I.U.E., (C.I.O.) has accused the local of trying to put the welfare of G.E. employees in the hands of a small minority. Pamphlets were circulated among G.E. workers today, signed by 'The Committee for Clean Unionism.' A spokesman said the committee is defending Jefferson Lowman, former local president, who will come up for expulsion action at a union membership meeting Thursday. The pamphlet . . . referred to expulsion action as 'a Kangaroo Court' action. Lowman, during last month's bitter G.E. strike, had written letters to the local newspapers asking for a secret ballot vote on going back to work. It raised the ire of active strikers. . . . The pamphlets . . . accused the leaders of Local 320 of being a 'Politburo' and said 'This small minority has misled, bullied and intimidated 9,000 people (employees of G.E. in Syracuse). The pamphlets said Lowman was offered a choice of publicly retracting his published statements and accepting a year's suspension or 'a steamrollering general meeting forcing him out of the union.' Local 320 officials, who maintained that the issue is solely an internal affair, declined to comment. Meanwhile, Lowman was nominated with several others for the local business agent job. In the vote of the special election committee—which decides the date, place and conditions of the balloting—a Lowman follower said his group snared four of the six seats and one of three alternates." [48] [The local business agent position became vacant during October when Harold Martin, who held this post during the strike period, was promoted to James B. Carey's central staff. In the November 1 elections for local officers, the slate put up by the incumbent union leaders won the balloting. Former President Jeff Lowman was subsequently expelled from the union.]

[47] *Syracuse Herald-American,* September 24, 1950.
[48] *Syracuse Herald-Journal,* October 11, 1950.

December 31, 1950: The first post-strike, full-page, community-relations advertisement by the General Electric Company appeared on New Year's Eve bearing the caption "MORE THAN A PARK." The ad featured a picture of a neon G.E. sign bearing the message "Merry Christmas and a Happy New Year," which had been installed on an outside wall of the Electronics Park reception building. A second G.E. message in the text accompanying this photograph and caption stated that "Electronics Park is also a piece of ground with beautifully designed buildings, but more important than that, it is the home of thousands of industrial workers dedicated to a single purpose: to design, to invent, to improve and produce electronic products that will increase the enjoyment and the standard of living, to protect and maintain our way of life." [49]

[49] *Syracuse Herald-American,* December 31, 1950.



Section C. Marketing and Advertising

General Electric Company, Case B

Introducing Receivers in TV Cities, 1947–49 [1]

Throughout World War II, the General Electric Company held before both civilian and military groups the delightful prospect of a postwar world in which "everyman" would tune in his TV receiver—preferably G.E.—to see and hear whatever is new and entertaining. The firm's campaign of institutional advertising for all product lines in national magazines and over the air represented an annual investment of between $1 and $2 million from 1941 through 1945. In the first postwar year, while the Federal Communications Commission was considering the feasibility of commercializing color TV, as well as black-and-white, G.E. concentrated upon re-establishment of its radio-receiver market. Pilot models and dealer's samples of TV receivers were also readied during the latter part of 1946. As 1947 approached, G.E.'s Electronics Department faced up to the problem of introducing long-promised TV receivers to the home market.

Photograph at top of page: G.E.-TV advertising display punches home its message. (*General Electric Company*)

At the end of 1946, TV broadcasting stations were in operation only in six large metropolitan areas. Only four additional areas were slated to have completed transmitting stations by the end of 1947. Thus, TV-receiver distribution was to focus initially upon a relatively concentrated market, although one which was densely populated and promising in terms of consumer buying power. Beyond 1947 loomed 1948 and 1949. The number of TV cities was expected to reach 30 by the end of 1948 and to approach 60 by the end of 1949. The opening up of new areas in the 1950's would depend upon F.C.C.'s handling of station-construction applications that had not yet been received or acted upon. The number of TV receiver sets in the hands of the public at the end of 1946 was approximately 12,000, the majority of which were prewar models. By the end of 1947, it was expected that this set-ownership figure would rise a dozen-fold to the 150,000 level. A year later, it might have increased another 5-fold, reaching a figure of 800,000 or 900,000. A further three- or four-

[1] Adapted by permission from James D. Scott, *Advertising Principles and Problems,* New York: Prentice-Hall, Inc., 1953.

fold increase during 1949 would push the total number of sets outstanding over the 3 million mark by the end of the decade.

Even this achievement would represent but "the end of the beginning" of TV-market expansion. The number of sets that might ultimately be owned could not be placed at much less than 40 or 50 million. Moreover, any significant improvement in set design or in manufacturing methods might invalidate the usual saturation point calculations of marketing men. The problem that faced G.E. executives late in 1946, then, was how best to put the "tip of the tail" of a projected giant dragon into actual operation. In some respects, the magnitude of this marketing-advertising policy problem, in its long-run implications, resembled that of the dragon itself.

The existence of an established distributing organization for G.E. radios gave G.E. marketing executives a point of departure for their planning in the related TV field. Ever since its re-entry into the radio field during the late 1930's, General Electric had been engaged in the task of building a satisfactory wholesale and retail distributing organization for this product line. Approximately 50 wholesale distributors and 15,000 retail dealers comprised the G.E. radio-distributing organization in 1946.

G.E.'s own subsidiary, the General Electric Supply Corporation, was the dominant wholesale organization in this distribution picture, although a number of independent wholesalers played roles in certain territories. These wholesale distributors handled many other G.E. product lines, such as lamps, washing machines, dish washers, stoves, heaters, fans, and refrigerators, as well as G.E. radios.

The 15,000 retail dealers handling G.E. radios not only sold other G.E. product lines as listed above, but they typically sold other brands of radios as well. A majority of these franchised G.E. dealers were in the electrical appliances, radio, and music businesses. Other types of outlets represented were furniture stores, department stores, hardware stores, jewelry stores, and other miscellaneous retail outlets. G.E. wholesale distributors were empowered to appoint dealers as they saw fit within their area.

The entire G.E. distribution structure had been reactivated following the close of World War II. G.E. radios, for instance, had been completely unavailable for civilian sale from the summer of 1942 through the fall of 1945. Postwar radios were still being distributed on an allocation basis at the close of 1946. If TV franchises were now to be awarded to selected radio dealers in certain marketing areas, the complexity of the problems confronting distributors in these areas would be considerably increased. During the war, G.E. had engaged the market research firm of Lennen and Mitchell, Inc., to investigate the entire G.E. radio-distribution setup. This research firm had interviewed over 50,000 consumers, over 3,000 retail dealers, and over 250 wholesale distributors to find out their opinions concerning G.E. and other radio manufacturers. The findings of this firm on the radio problem would be of considerable usefulness to G.E. management in arriving at a solution to the TV-distribution problem as well.

In January 1947, meetings were held by G.E. Electronics Department management with the G.E. wholesale distributors serving each of the six TV markets then active. Over-all G.E. TV-sales policies were discussed, new 1947 receiver models were unveiled, retail price objectives were listed, and trade discounts for wholesale distributors and retail dealers were announced. In addition, emphasis was placed upon problems involved in servicing receivers and upon problems involved in putting across the firm's advertising and sales promotional plans for 1947. As each new TV-broadcasting area opened up during 1947, 1948, and 1949, similar conferences were held with the G.E. radio distributor serving that trading area. This distributor was automatically enfranchised to market G.E. TV receivers as well.

The G.E. distributor in each TV area was assigned the responsibility of selecting retail dealers to handle the TV line. The better dealers in each region were being courted at the same time by distributors for rival firms, such as R.C.A., Philco, and Westinghouse. In this respect, competition was unusually keen. General Electric distributors adopted the procedure of calling open meetings of prospective retail dealers at which various G.E. sales executives and officials of the distributor firm would deliver preliminary talks. TV models were demonstrated at these meetings. Advertising and sales promotion programs were outlined. Servicemen's and salesmen's training courses were announced. Individual dealers present were then encouraged to meet with the distributor's salesmen individually for the pur-

pose of accepting franchises and placing orders for G.E. TV receivers.[2]

During the fall of 1946, well ahead of the 1947 selling season, representatives of Maxon, Incorporated, the advertising agency that handles the Electronics Department account, had submitted a special TV advertising program proposal to G.E. management. Excerpts from the Maxon report on this subject read as follows:

As Shakespeare said, "There's a tide in the affairs of men, which taken at the flood, leads on to fortune." Or, to make a more practical application —"If you don't advertise General Electric television soon, you'll miss the boat." There are few new products in which both the trade and the public are so keenly interested as the Television Receiver. . . . The six cities where television is already established and the four added cities where television stations will be opened before the end of 1947 offer a wealthy, concentrated, and highly profitable market well worth cultivating. . . . We recommend a special television campaign in these ten markets. The exact timing of the start of this campaign should be determined by the availability of merchandise. You will get a far greater return on the dollar by advertising when sets are available rather than by spending money before the merchandise is on the dealer's floor.

In the six cities where television now is a reality, we recommend a General Electric newspaper campaign to consist of six 1,000 line ads and six 600 line ads—twelve insertions altogether. . . . Your dealers need a striking window display piece on television. The set itself has high attention value but it is decidedly to your interest both to enhance this attention value and to forcibly identify the merchandise as a product of General Electric. For this we suggest a large display piece similar in size—as impressive and as flexible as the Bing Crosby display for the standard line. . . . The purchase of the first television receiver is going to be a matter for weighty conference in every home. The investment is large. The subject is new. For this reason we suggest the preparation of a 4-page brochure on each model, to be imprinted either for or by your dealers and sold to them on a more or less self-liquidating basis. . . . Your dealers also need a small folder to help them merchandise the television line and in many cases to save the expense of giving away the more costly brochure. . . .

The television receiver market will be highly selective at least for the first year. For that reason at present we do not recommend the use of this truly mass medium [radio] to advertise television receivers. A television set manufacturer should use telecasting as an advertising medium. This is logical on industry grounds. It makes excellent sense from the standpoint of straight advertising since today every television set is being looked at in operation by the friends and neighbors of present owners as well as the patrons of bars and grills where television sets are installed in public places. . . . Just as it is important for you to stake out General Electric's claim as a television set producer in the public mind, it is even more important to establish this with the dealers everywhere. For that reason we suggest an every other month two-color trade paper schedule. . . .

The Maxon agency advertising recommendations were reviewed carefully by G.E. Electronics Department executives. After further discussion the following action was taken:

1. G.E. executives approved the recommendation that newspaper advertising be undertaken in specific TV market areas. Rival firms were already active in the field, particularly in the New York City area. G.E. advertising of TV receivers was needed to improve or maintain brand preference for G.E. sets. Suggested dealer aids were not forthcoming, however, at this time.

2. G.E. executives, on their own initiative, decided to launch a program of national magazine advertising to solidify the position of G.E. as a pioneer leader in TV development. At this time, no competitor was advertising outside of areas where TV facilities were operating or under construction. G.E. management believed that a relatively modest magazine advertising program would prove effective in these as yet untapped areas. Moreover, this magazine campaign might stimulate the desire of people within new communities to enjoy TV entertainment. Businessmen within these communities might be encouraged to purchase TV transmitters from G.E. The telecasting industry might thus spread at an accelerated pace. This decision was in keeping with G.E. management's feeling that advertising for actual TV sales was little needed in 1947, in light of heavy demand relative to supply. Management, therefore, continued to stress long-range institutional advertising.

3. The Maxon recommendation for TV broadcasts sponsored by G.E. was not followed

[2] The basic approach and many of the concepts discussed in this case have been obtained from Professors James D. Scott and Alfred W. Swinyard at Syracuse University.

in view of the limited size of the audience that could be anticipated during 1947.

4. The Maxon recommendation for trade advertising was also deferred for 1947, as existing G.E. dealers were automatically to be made G.E. TV dealers in the few areas in which TV was to be available at all. The nature of supply and demand was such that TV sets would have to be allocated initially even with these established dealers.

5. The total amount of money that G.E. devoted to TV advertising during 1947 was, nevertheless, 11 per cent greater than that proposed by the Maxon agency, despite the omission of two phases of the agency program.

A year later, in December 1947, Electronics Department officials again faced the problem of planning for distribution of TV receivers on an ever-expanding scale during the ensuing year, 1948. Whereas the spread of TV markets during 1947 involved a growth from 6 to 13 metropolitan areas, the projected growth for 1948 was from 13 TV cities to a new figure of 30. Set ownership, which was less than 200,000 as the year 1948 opened, was expected to reach the 1,000,000 figure shortly after the year's close.

General Electric had available a half-dozen new TV models, in addition to the two, rather expensive, 10-inch console models with radios built in, which were featured during 1947. The new line included a 10-inch table model set, which retailed at one half the price of the former combination models. It also was to include 10-inch and 12-inch "daylight" picture tube models, which out-performed models having conventional picture tubes, although G.E. executives were not sure of the introduction date of these improved tubes at the time when they planned for the year's activities.

The officials of Maxon, Inc., recommended the following advertising and promotion program for TV receivers to G.E.:

1. That the advertising appropriation be increased substantially.
2. That approximately 75 per cent of the advertising appropriation be spent in TV cities.
3. That the remaining 25 per cent of the appropriation be used on national magazine advertising.
4. That G.E. inaugurate a program of advertising in trade papers and, in addition, assist distributors and dealers by supplying sales promotional material for their use.

The agency officials explained that "intensive and consistent advertising pressure in local markets is the keynote" of their recommendations. They explained their approach as follows:

Each TV city has been considered as a local market (50 mile radius) and insofar as possible recommendations cover important outlying cities within these areas. In determining advertisement size and frequency of insertion, we have taken into consideration that, in many of the markets listed, TV will be introduced for the first time. This fact automatically dictates the use of large space at the outset of each campaign. However, since we must also provide for consistent pressure, schedules have been arranged so that continuity in advertising will be maintained over the twelve months period covered by the budget.

To create sales momentum at the fastest possible rate, the initial advertising effort must be sufficiently dominant and impressive to register a compelling impression with the public and at the same time arouse distributors and dealers to full merchandising action. Quick acceptance for TV must be gained and immediately translated into a strong desire to possess the service. This acceptance and desire must be extended through every market broadly, penetrating all economic levels deeply. The public must be made anxious to see and hear TV, and most important of all, people must be convinced that the G.E. Receiver provides definite advantages which make it the right set to buy.

The use of media has been planned around two major campaigns in each market during 12 months —The Introductory Campaign and The Follow-Through Campaign The spearhead of these two campaigns will consist of 28 dominant newspaper advertisements in the key schedule throughout the year. Each of these campaigns operates as a "wave" of advertising, opening with big 1600 line space units, tapering down in size through 700 line and 400 line display ads. These key advertisements would appear at approximate two week intervals throughout the year. Interspersed between them to maintain . . . continuity we have planned 92 additional 28 line insertions in the key schedule. These would employ a technique similar to radio spot announcements. . . . These small advertisements would be localized to the community in which they appeared based on programs that are available in those particular cities. . . .

To generate additional momentum and provide plus impact at the beginning of each campaign period, we also recommend two flights of one minute radio spots set up on the basis of two spots per day—5 days per week—on the leading stations in each key market. Every effort will be made to position these spots so as to reach the largest possible audience by capitalizing again the tremendous potential interest of sports-minded people in TV. . . . It is expected that the extra pressure provided by this selective use of radio at the outset of each campaign period will establish consciousness of

the G.E. advertising message with 4/5ths of the families in the radio station areas within a period of 30 days. Considered together with the newspaper schedule, this program, in your agency's opinion, provides the opportunity to establish sales leadership for G.E. on a sound basis during the first critical year of selling operations. . . .

TV sales promotion starts practically from scratch. Currently, there is but one model in the line with distribution confined to limited groups of dealers in the relatively few areas where service is available. Therefore, sales promotion needs up to now have been comparatively simple. Next year . . . the number of models in the line will be increased. The number of dealers selling the product will multiply embracing sales training material, indoor and outdoor identification, display material, direct mail, demonstration wall charts, window streamers, posters, as well as spec sheets, folders and a new and much more comprehensive dealer mat book. In addition, G.E. should supply distributors and dealers with a comprehensive plan book, outlining step-by-step every form of promotion to be utilized in opening up a new service area. There should be at least two merchandising broadsides during the year, designed to promote more effectual dealer tie-in with factory-sponsored advertising and promotion. . . . The agency feels . . . that in view of the aggressive advertising program which is being considered, that sales promotion should be planned on a consistently aggressive basis.

Although the G.E. Electronics Department marketing executives altered the advertising agency's proposal in a number of respects, the basic scope and direction of the approved program were not unlike those recommended by Maxon. A number of shifts in emphasis were made during the course of the year, but the net effect was to increase G.E.'s over-all advertising and sales-promotion budget, rather than to trim it back.

During the summer of 1948, G.E. executives were hosts at a group conference of G.E. TV distributors at Electronics Park. New TV receiver and new radio models, which were scheduled to be introduced in the fall, were shown to 130 distributors' executives at that time. G.E. executives reviewed the past year's operations, and outlined the prospect for the year ahead. They defined sales objectives to be fulfilled. Distributors' performance to date was reviewed, and dealer performance within each distributorship was analyzed. Methods of sales promotion were reviewed, and a cooperative advertising schedule, involving G.E., distributor, and dealer, was presented. Problems of servicing TV sets and of financing an expanded TV business were also investigated at this time. Individual distributors were given the opportunity to discuss their own specific problems with G.E. Electronics Department personnel at private conferences. Orders were also secured from each distributor at this time in accordance with his sales quota.

Shortly after these conferences, executives at Electronics Park reappraised their sales and advertising efforts for 1947 and 1948 in order to plan effectively for 1949. The G.E. officials discussed their tentative findings in a series of meetings with Maxon, Inc., officers during the fall of 1948. One over-riding factor in their calculations was a realization that TV was a rapidly growing child. Whereas receivers were being sold in 30 TV areas late in 1948, it was expected that this number would nearly double again by the end of 1949. The 1948 year-end figure of approximately 900,000 sets in operation might well top 3,000,000 by the end of 1949.

Moreover, G.E. TV sales were growing at a rate that was fully one-third greater than that for the industry as a whole. So rapid was the rate of growth of TV that it appeared that G.E.'s TV sales would top its radio sales in dollar volume by the end of 1948, and would go on to double anticipated radio sales by the end of 1949. Ultimately, G.E. TV sales would exceed radio sales many times over.

Other changes of importance in the G.E. TV picture for 1949 had to do with merchandising matters. Two new product-design improvements were now ready for the mass market. They were a new circuit design, which featured G.E.'s "inter-carrier sound system," and a new aluminized picture tube, which featured G.E.'s "daylight" viewing conditions. Other notable trends within the industry, which impinged upon G.E. from the outside, were the trend toward bigger picture tubes, the trend toward increased proportions of table models providing TV reception only, and the trend toward significantly lower prices throughout the product line as TV tapped the mass market.

The new importance already achieved by TV was promptly recognized by Maxon in its proposals for a G.E. advertising program for 1949. Although recognizing that radio and TV were two quite distinct and frequently conflicting businesses, Maxon executives saw fit to combine the advertising program for both of these Electronics Department products in their 1949

proposals. The major Maxon recommendations were as follows:

1. That local newspaper advertising be emphasized even more importantly during 1949 than in 1948.
2. That magazine advertising for TV and radio receivers be combined.
3. That the separate TV schedule in trade papers be discontinued and that G.E. feature TV continually along with radio in 1949 trade-paper advertising.
4. That TV broadcasting sponsorship be eliminated and that magazine advertising be reduced in order to provide increased funds for a network radio program.

Maxon based its G.E. proposals on the following statement of objectives:

1. To increase the percentage of people who walk into a store and say "I want to look at a Performance Engineered General Electric radio, or TV set." In other words to expand consumer acceptance and demand by creating a positive feeling of product superiority through persistent magazine and radio advertising—to translate this demand into local buying action through dominant newspaper advertising. This is prerequisite to gaining a larger share of the industry's declining radio business, and a bigger share of the expanding market for TV.
2. To presell America that "the modern way to Wake Up or Go to Sleep calls for a General Electric clock-radio at your bedside." To establish General Electric as the originator and unquestioned leader in this still relatively new field of service.
3. To build public desire for other new services, such as automatic phonographs that play both long playing or standard records—the unmatched musical enjoyment provided by the G.E. Electronic Reproducer.
4. To establish portable and personal radios as indispensable accessories for the traveler or out-of-doors pleasure seeker.
5. To extend public consciousness of the importance of Electronics Park, and its contributions in every phase of radio and TV research, development, and manufacture. In so doing to intensify the idea that "You can put your confidence in General Electric."
6. To make the distributor and the dealer organizations so acutely conscious of the consumer selling force exerted by G.E. advertising, that they will automatically accept G E. as the leader, and strengthen their selling efforts behind the entire line.

The G.E. executives accepted the major features of the Maxon proposals, after making their usual refinements, adjustments, and moderate changes. At this time, G.E. also crystallized its procedures in opening new markets for guidance of later distributors who would encounter the same types of problems. The best thinking of the Electronics Department marketing and advertising executives was set down in a 140-page brochure entitled "The Introduction of Television in a New Market." It was distributed to district managers, receiver division representatives, and distributors, so that the general problem might, henceforth, be tackled in an explicit, orderly manner within each developing market. The Electronics Department also inaugurated the practice of checking up thoroughly on its advertising and sales-promotional programs in both new and old fields after they had been in operation for a period of six months, in order to determine their relative effectiveness. The underlying objective here was the customary financial one of getting at least 100 cents in results for every dollar spent.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	438–440	What alternative policies might G.E. have considered before deciding to enfranchise automatically its radio distributors to wholesale G.E. TV receivers as well? In your opinion, were these alternative policies worthy of serious consideration by Electronics Department management?
2	440–442	If G.E. did not need to use advertising at all to ensure the sale of its entire TV output in 1947 and 1948, might not the firm have been well advised simply to "let its TV receivers speak for themselves" in actual operation, thereby conserving extra advertising funds for use during later years when, presumably, the firm's entire TV output might not be so easy to sell?
3	440–443	How did basic advertising objectives differ from year to year in the Maxon advertising agency proposals of 1947, 1948, and 1949?
4	440–443	In what respects did the advertising and sales promotional policies and programs adopted by Electronics Department management during 1947, 1948, and 1949 differ from those proposed by the Maxon agency? Do such changes as were made by G.E. executives all appear to have been well advised? Discuss.
5	440–443	Is it a proper function of Electronics Department sales executives to check up closely upon the sales performances of local G.E. retail dealers when these dealers report to G.E. wholesale distributors, rather than to Electronics Department sales executives? Discuss.
6	438–443	In the 1947 advertising program, the Maxon agency's recommendation that TV broadcasts *be sponsored* by G.E. in New York City was *not* followed. A network TV program *was* inaugurated by G.E. in 1948. In the 1949 advertising program, the Maxon agency's recommendation that TV advertising *be abandoned* in favor of increased radio advertising was *not* followed, despite the merit of relative cost arguments. Can you advance possible reasons for G.E.'s decision in each year?

Section D. A Case History in Financial Management

The 50-Year Record of Youngstown Sheet and Tube[1]

The Youngstown Iron Sheet and Tube Company was incorporated in Ohio in 1900. Its purpose was stated to be the manufacturing and selling of sheet iron and other iron and steel products. The home plant of the firm was in Youngstown, Ohio, a community fully 65 miles from Lake Erie and 35 miles from the Ohio River. The Mahoning Valley surrounding Youngstown contains certain surface iron ores, limestone and timber from which charcoal is produced, and bituminous coal. Hence, blast furnaces sprang up in the valley long before the vast iron ore deposits of the Great Lakes region were discovered. When the industry based upon Great Lakes ore came into its own at the turn of the 20th century, plants, equipment, and men with steel "know-how" were already set up for business in the Youngstown area.

The year 1900 was one of prosperity and optimism throughout the United States. In the iron and steel business, a number of combinations and mergers were known to be brewing, including the contemplated formation of U.S. Steel, which was consummated in 1901.

Several pioneer steel families, in the Youngstown area, who had sold their holdings to these newly-created, large steel combines decided to put their surplus funds back to work in a locally owned company, Youngstown Iron Sheet and Tube. Fifty-five Mahoning Valley residents subscribed $600,000 in November 1900 to give birth to the new firm. The first plant along the Mahoning River consisted of a puddle mill, a sheet mill, and three tube mills. The first balance sheet of the Youngstown Company, as of March 1, 1902, is shown in Fig. D–2 on page 448.

At the company's inception, a strong demand still existed for iron sheets and pipes. Soon thereafter, the superior chemical and physical properties of steel were demonstrated conclusively. The company shortly converted its operations from iron to steel. The word "iron" was dropped from the company name in 1905 as no longer appropriate. In 1905, the company started construction of a Bessemer steel plant consisting of four cupolas, two 17-ton converters, soaking pit furnaces, a blooming mill, a billet mill, a sheet bar mill, a skelp mill, a universal plate mill, and auxiliary equipment and buildings.

Between 1900 and 1905, the capital of the company was increased from $1 million to $4 million in authorized shares. Each subsequent year in the company's history has shown substantial growth in plant, equipment, and facilities. Even during the trough years of the great depression, capital expenditures exceeded $2 million a year.

Recently company expenditures have attained a rate of $24 million in a single year. New units have been developed to make new products, obsolete and worn-out units have been replaced with units of later design, and additional capacity has been created to meet developing demand.

A number of other firms have been acquired by Youngstown Sheet and Tube during its 50-year growth period. In addition to the plants of going concerns, the Youngstown Company has acquired valuable iron ore properties with substantial ore reserves and strategic plant sites with valuable riparian rights along Lake Michigan near Chicago. The company has expended a great deal of time and money over the decades in integrating new acquisitions with its previously owned facilities. The demand for steel in the Chicago district was particularly keen at midcentury. The company was engaged in capital improvements and additions, in this region alone, which would cost several score millions of dollars.

DIVIDEND AND INVESTMENT POLICIES

In light of the growth pattern of the firm and the demand pattern for the steel industry, the directors of the Youngstown Company,

[1] See *50 Years in Steel,* Youngstown, Ohio: The Youngstown Sheet and Tube Company, 1950.

who represent approximately 15,000 shareholders, have consistently adhered to the following dividend policy:

> . . . it has been the policy of the board of directors from the early days of the Company's history to conserve its earnings and use a part of them for replacement of worn-out and obsolete facilities and expanding its capacity. The directors have been conscientious in the declaration of dividends but have had the foresight to realize that the Company, in order to survive, must meet its competition and always be in position to manufacture and market its portion of the country's steel production. As a result of this policy the plants, properties and raw material reserves of the Company have been increased and extended over the years so that the earning power of the Company has been developed substantially and thus the equity of the shareholders has been increased.[2]

As an illustration of the great swings in demand experienced by the steel industry, it may be noted that, in 1932, Youngstown demand reached a low point of 13.4 per cent of rated capacity. Financial problems soon became severe during the trough of the depression. At the close of 1933, the company had just $14 million in cash and U.S. Government securities. At the same time, it had fixed obligations to pay, in 1934, the sum of $2 million in cash or bonds for sinking-fund requirements and almost $4.4 million in cash for interest on its bonds. It had more than $5.4 million of other current liabilities.

During 1934, after having made exhaustive market and engineering studies, the Youngstown management launched a program of increased diversification for the company's products. Thus, the company was in a position to serve the automobile industry and other great users of strip and sheet steel when consumer demand for their products revived after the middle '30's. During the late '30's and '40's, the Youngstown Company spent nearly $200 million on additions, betterments, and improvements, many of which pertained to the diversification program.

Throughout the firm's history, the management has been active in the acquisition of raw material reserves. It acquired, through ownership and long-term lease, vast acreages of bituminous coking coal in Pennsylvania and West Virginia. The company has sought energetically to add to its share of the United States' tightening iron ore reserves. It has experimented extensively in the commercial development of low-grade ore, although admittedly knotty problems still remain in this field.

The Youngstown Company has invested heavily in the newly discovered Labrador iron ore field. It is prepared to make substantial capital expenditures in connection with transportation facilities and mining facilities before the field is finally opened on a commercial scale. This aspect of the company's operations may prove of vital importance to the economy of our nation.

All of the Youngstown Company plants at midcentury had an estimated combined annual capacity of 3.6 million net tons of pig iron. They also had facilities for converting the iron so manufactured into an estimated annual capacity of 4.25 million tons of steel ingots. The current expansion program will raise these capacity figures to 4.1 million and 5.2 million net tons for iron and steel, respectively. The plants are also equipped with facilities for rolling the ingots into the various semifinished and finished steel products that the company manufactures. The Youngstown Company, alone, is equipped to turn out approximately one-half as much steel as was produced by either France or Japan during their best years.

EMPLOYMENT DATA

At the time that it started operations in 1901, the Youngstown Company employed 600 people. In 1950, this number exceeded 27,000. The direct payroll of the company in 1950 topped $100 million. The company has an average of $11,000 invested to provide a job for each employee. Yet, because of the increased costs of plants, machinery, and equipment, an investment of $30,000 or more is necessary to create a new job for a new employee. Great emphasis is placed upon diversification of products and the expansion of markets with a view to bringing about greater continuity of operations and steadier employment. Through installation of safety devices and through development of safer and more efficient methods, the company has greatly improved working conditions in its steel plants during the past half century.

SUBSIDIARY COMPANIES

Over the decades the Youngstown Sheet and

[2] *Ibid.*, page 15.

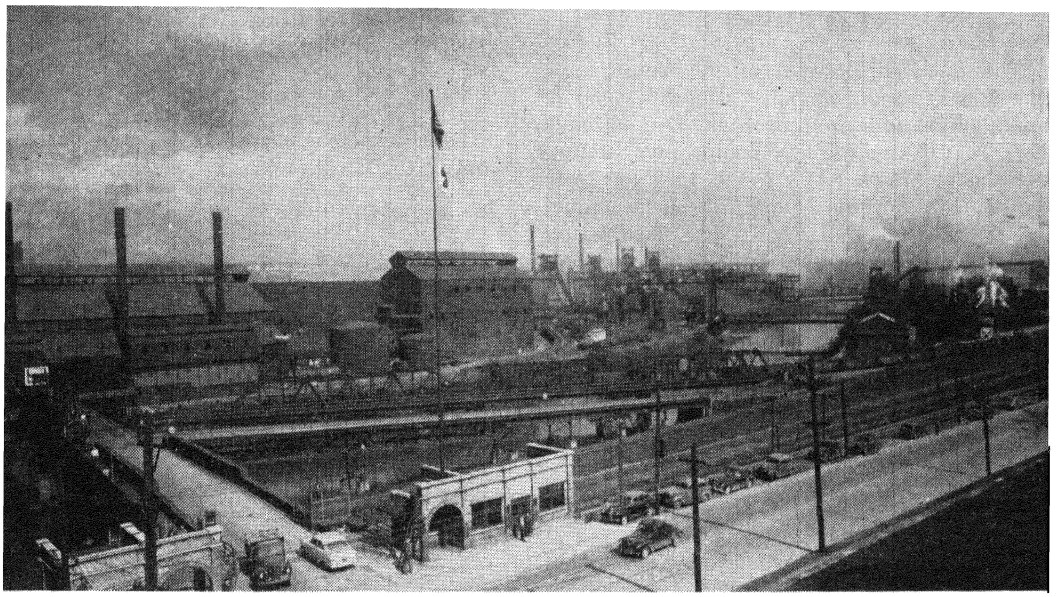


Figure D–1a: Partial view of Campbell Works showing Blast Furnace Section and Coke Ovens. (*Courtesy Youngstown Sheet & Tube Company, Youngstown, Ohio*)



Figure D–1b: Tapping steel in Open Hearth Department. (*Courtesy The Youngstown Sheet & Tube Company, Youngstown, Ohio*)

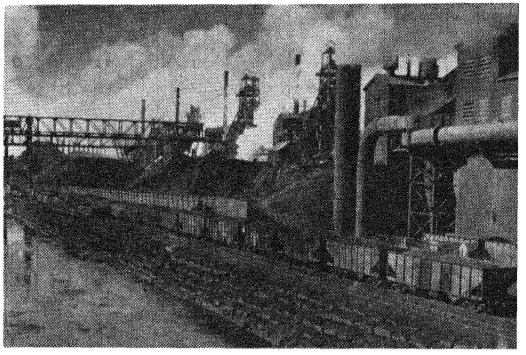


Figure D–1c: View of Blast Furnace Section. (*Courtesy The Youngstown Sheet & Tube Company, Youngstown, Ohio*)

Tube Company has organized or acquired a number of subsidiary corporations to aid in the operation of its raw-material properties and to merchandise its products. The Continental Supply Company merchandises oil-country tubular products manufactured by the company, as well as oil-country machinery manufactured by other companies. The Supply Company operates 55 stores in the United States and others in Canada. It has an export department that does business in practically all foreign oil fields. The Youngstown Steel Products Company merchandises company products throughout the United States and abroad. Numerous other mining and specialty companies are operated as subsidiaries of the Youngstown Company. The company also has interests varying from 8 per cent to 80 per cent in a number of other companies operating in related fields.

FIFTY YEAR FINANCIAL STATEMENTS

The financial position of the Youngstown Sheet and Tube Company after 50 years of operation is indicated in Figs. D–2 through D–5. Fig. D–2 is the first Youngstown balance sheet as of March 1, 1902. Fig. D–3 sets forth the financial position of the firm on December 31, 1949. Fig. D–4 shows the fixed assets owned by the company from date of incorporation on November 23, 1900, to December 31, 1949. Fig. D–5 shows the distribution of total revenues received by the company from date of incorporation to December 31, 1949.

In presenting these financial data, President J. Lester Mauthe of the Youngstown Sheet and Tube Company made the following observations:

. . . Two items are of special significance in connection with these figures showing results of operations over a fifty-year span by one of the moderately sized companies in one of the nation's major industries. The first item to be noted is that, after payment of the necessary and usual costs of operation, including costs of raw materials and supplies, indirect labor, depreciation and depletion, taxes, interest and direct labor, there remained 6⅓ percent of the total gross income as profit for the owners of the enterprise. The fact is interesting because public opinion surveys have indicated that the public generally believes corporations make profits of 25 per cent or greater on their sales. Experience shows that the average well-informed person thinks and agrees that an average profit of 6⅓ per cent over 50 years or in a year is too low in a competitive free enterprise system and is inadequate to provide sufficient funds for the expansion of industry, improvement of the standard of living and an increase in the employment of people.

FIGURE D–2

The following is a copy of the first balance sheet of the Company.

The Youngstown Sheet and Tube Company

Balance Sheet, March 1, 1902

	Assets		
Cash	$ 61,404.20		
Accounts receivable	48,944.01		
Bills receivable	20,000.00		
Inventories of materials	136,753.30		
Crete Mining Company stock	90,000.00		
Plant, buildings, machinery and equipment	900,964.56		
	Liabilities		
Bills payable		$	110,000.00
Accounts payable			130,496.05
Capital stock—$100 par value			1,008,050.00
Earned surplus			9,520.02
	$1,258,066.07		1,258,066.07

Source: *50 Years in Steel*, page 58, Youngstown, Ohio: The Youngstown Sheet and Tube Company, 1950.

D–3

The Youngstown Sheet and Tube Company and Subsidiary Companies Consolidated Financial Position at December 31, 1949

Current assets:		
Cash	$ 52,592,648	
United States Government securities	71,482,804	
Receivable from customers and others, less allowance for doubtful balances of $2,154,634	30,005,016	
Total liquid assets	$154,080,468	
Inventories of finished and semi-finished products, raw materials and supplies, at lower of cost or market	58,922,034	
Total current assets		$213,002,502
Less–Current liabilities:		
Payable to material suppliers and others	$ 13,851,926	
Dividend payable	1,675,008	
Accrued pay rolls	6,631,916	
Accrued taxes–general	2,063,565	
Accrued Federal taxes on income	21,843,236	
Total current liabilities		46,065,651
Net current assets (working capital)		$166,936,851
Investments in affiliated companies and sundry securities, etc.		13,425,849
Land, mineral properties, dwellings, plants, buildings, machinery and equipment	$326,861,708	
Less–Reserves for depletion of mineral properties and depreciation of plants and equipment	235,244,441	
Net fixed assets		91,617,267
Prepaid royalties, insurance and other expenses–cost allocable to future operations		745,948
Total assets less current liabilities		$272,725,915
Deduct:		
Minority shareholder's equity in subsidiary company	$ 36,224	
First Mortgage Sinking Fund 2¾% Bonds, Series E, dated July 1, 1945, due July 1, 1970 (sinking fund payments of $1,500,000 annually commence on July 1, 1951)	30,000,000	30,036,224
Net assets		$242,689,691
Ownership equity:		
Common shares:		
1,675,008 shares without par value–stated value	$105,088,053	
Profit retained in the business; earned surplus of $116,701,638 and surplus reserve of $20,900,000	137,601,638	
Total ownership equity at December 31, 1949		$242,689,691

Source: *50 Years in Steel,* page 59, Youngstown, Ohio: The Youngstown Sheet and Tube Company, 1950.

D–4

The Youngstown Sheet and Tube Company and Subsidiary Companies Consolidated Land, Mineral Properties, Dwellings, Plants, Buildings, Machinery and Equipment From Date of Incorporation on November 23, 1900 to December 31, 1949

Description	Balance in Fixed Assets at December 31, 1949	Reserves for Depletion and Depreciation	Residual Book Value at December 31, 1949
Surface lands	$ 8,351,633		$ 8,351,633
Mineral lands (coal, iron ore and zinc)	30,534,150	$ 17,576,149	12,958,001
Dwellings, plants, buildings, machinery and equipment	287,975,925	217,668,292	70,307,633
Total	$326,861,708	$235,244,441	$ 91,617,267

During Period November 23, 1900 to December 31, 1949

	Expenditures for Fixed Assets				
Classification	Cost of Additions and Betterments	Properties Purchased	Total	Retirements and Sales	Investment in Properties at December 31, 1949
Manufacturing properties	$260,769,904	$ 72,159,567	$332,929,471	$ 68,819,484	$264,109,987
Iron and zinc ore mining properties	19,038,578	19,836,580	38,875,158	14,496,388	24,378,770
Coal mining properties	25,793,898	16,709,080	42,502,978	9,292,758	33,210,220
Housing facilities for employees	10,450,716	2,510,693	12,961,409	10,403,912	2,557,497
Other miscellaneous properties	11,224,338	2,004,094	13,228,432	10,623,198	2,605,234
Total properties	$327,277,434	$113,220,014	$440,497,448	$113,635,740	$326,861,708

	Additions to Reserves by Charges to Income and through Acquisitions				
Deduct—Reserves for:	Charges to Income	Acquired by Purchases	Total	Retirements and Sales	at December 31, 1949
Depletion of mineral properties	$ 13,571,601	$ 8,558,050	$ 22,129,651	$ 4,553,502	$ 17,576,149
Depreciation of dwellings, plants, buildings, machinery and equipment	257,281,168	22,493,041	279,774,209	62,105,917	217,668,292
Total reserves	$270,852,769	$ 31,051,091	$301,903,860	$ 66,659,419	$235,244,441

Source: *50 Years in Steel,* pages 64, 65, Youngstown, Ohio: The Youngstown Sheet and Tube Company, 1950.

D–5

The Youngstown Sheet and Tube Company and Subsidiary Companies Consolidated

Distribution of Total Revenues

From date of incorporation on November 23, 1900 to December 31, 1949

The Company received:		
From customers for products purchased by them		$5,122,702,261
Dividends received, interest earned, and other income		76,068,236
Total revenues		$5,198,770,497
The Company paid out or provided:		
For raw materials, supplies and services bought	$2,766,354,971	
Provision for depreciation (wear and tear or obsolescence) of plants, buildings, machinery and equipment and for depletion of coal, iron ore and limestone, etc., by mining operations	270,852,769	
Federal, State, local and miscellaneous taxes	267,462,953	
Interest and other costs on bank loans and long-term debt (including $27,265,805 dividends paid to preferred shareholders)	117,724,128	
Total costs		3,422,394,821
Leaving for wages and salaries of employees, dividends to shareholders, and amount required to be retained by company for needs of the business		$1,776,375,676
Out of which there was paid:		
Employment costs (pay rolls, vacations, social security taxes, insurance and pensions paid to or for account of employees)		$1,474,693,687
To common shareholders as dividends		125,126,950
Amount retained in the business for present and future needs and to assure steady work for employees		176,555,039
Total		$1,776,375,676

Source: *50 Years in Steel*, page 67, Youngstown, Ohio: The Youngstown Sheet and Tube Company, 1950.

The second item of special significance is that employees, direct and indirect, were paid a very substantial portion of all income. It is not possible to determine the amount represented by indirect labor in the cost of raw materials, supplies, equipment, transportation, etc., but it is probable that the percentage paid to labor in these items is equal to the percentage of total income paid to labor directly employed. Direct labor payments were nearly 30 per cent of total income and were 83 per cent of the amount remaining after the payment of the other necessary costs of doing business.[3]

. . . During recent years inflation has been advancing until today the dollar will purchase in ordinary goods only about 54 per cent of what it would have purchased just before the last war. In the construction of manufacturers' buildings,

[3] *Ibid.*, pages 49–50.

equipment and machinery, about two and one-half to three times as many dollars are required now to construct a steel plant as were required when the present plants were built.

These facts show that rates of depreciation presently allowed for income tax purposes are woefully inadequate.

The present law permits deduction of depreciation reserves only to the extent they are accumulated on original cost. This is in accord with what has been standard bookkeeping practice for many years but obviously such allowances for depreciation are entirely insufficient to provide for replacement of equipment and plants which have worn out and which must be replaced at present-day costs. The manufacturers find themselves with low-cost plants nearly depreciated on their books of account and with reserves which are insufficient to replace, improve or modernize such plants or machinery. The management then must find from other sources the additional funds required for replacements, betterments and improvements and that is why a very substantial part of earnings must be retained in the business. The market for bonds and shares of stock has not been sufficiently strong to guarantee the sale of new securities on a basis equitable to issuers.

For these reasons it seems to be generally recognized among economists, industrialists and business groups that what are being called profits of the business today, when inflation is in control to a greater extent than ever before, are not the kind of profits they seem to be. When the purchasing power of the dollar today is applied to profits, in order to ascertain their worth as compared with the same number of dollars of profit of ten or twenty years ago, there is an alarming shrinkage. Reserves of raw materials, plants and equipment actually are being used up, are melting away, under the misapprehension that depreciation and depletion provisions are sufficient to replace their units as they become exhausted and that "profits" are real and may be distributed thoughtlessly among shareholders. These latter suffer along with employees and the community when the cold realities of economics overtake our activities.

It has been said that steel is either a prince or a pauper but over the last two decades tax provisions have nullified any princely attributes. In order to earn six per cent gross on a billion dollar investment substantial increases in practically all steel prices would be required. If another company were to be created today at today's costs and prices with the same type and kind of plants, mills and equipment, with the same reserves of raw materials and the same working capital that this Company now has, a billion dollars would have to be expended. To earn a fair and adequate return on such an investment would require such company substantially to increase the prices of practically all its products. It is well to keep these thoughts in mind when construction of new steel plants is proposed and being discussed or other proposals involving competition with existing industry are made.[4]

J. L. MAUTHE,
President

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	445–452	Assuming that inventories and accounts receivable were at a low ebb along with demand at the close of 1933, would the approximate current ratio and the approximate quick ratio that you might reconstruct indicate that the firm was in serious danger of insolvency in light of its fixed obligations? Discuss.
2	445–452	Under what conditions might a depression-born diversification program improve the average utilization of the Youngstown Company's facilities, and not just add to its existing financial difficulties?
3	445–452	*a.* Do you believe that the Youngstown Company management is justified in tying up large sums of stockholders' funds by acquiring raw material reserve acreage that may not be utilized commercially for a great many years? *b.* Would the management be derelict in its duty if it failed to acquire these reserves? Discuss.

[4] *Ibid.*, pages 52–54.

QUESTION NO.	PAGE REFERENCE	QUESTION
4	445–452	*a.* Do you believe that the average business enterprise conducted in the United States from 1900 to 1950, including successes and failures alike, has earned an average profit of 6⅔ per cent or more on gross income? *b.* Does such a profit constitute an adequate return in the steel industry? Discuss.
5	445–452	*a.* What weight should directors of steel firms give to the depreciation policy prescribed by the Federal government for income tax purposes in deciding the depreciation reserve policy that they will follow in managing their own stockholders' invested funds? *b.* Are dividends paid out generally excessive relative to earnings in American industry today? Discuss.
6	445–452	Discuss the broad issues concerning industrial and governmental financial policy raised by President Mauthe of Youngstown Sheet and Tube. What stand do you personally take upon these issues?

Section E. Accounting

Practice Set

Three-Family Rental House on Western Street

The Enterprise: The three-family rental house on Western Street in Syracuse, New York, is owned by Professor Fairley C. Uhrent, an economics teacher at the university. Professor Uhrent had backed into the rental business, so to speak. He had purchased a 50-year-old house near the university shortly after the close of World War II so that he and his family might occupy the second-floor apartment there. Upon moving to a 1-family house in 1949, Professor Uhrent kept title to the 3-family house for rental purposes, rather than sell his interest during what he regarded as a temporary slump in the real estate market.

Professor Uhrent had obtained a 4 per cent G.I. mortgage loan on the Western Street house upon taking title in 1946. He had secured an additional 4 per cent personal loan in 1949 from a local bank to help carry the rental house in addition to his newly-purchased, 1-family house. This loan was increased during 1950. Thus, a local bank actually provided most of the capital that was tied up in the rental property.

Professor Uhrent assumed the risk of loss and assumed the burden of management of the rental housing venture. For these services the professor received a fair return despite the restraining influence of rent controls, which applied to the first and second-floor rental units. Mrs. Uhrent had exercised good judgment in her selection of tenants from among a long list of applicants for the privilege of renting at ceiling prices. Upon several occasions, these long-term tenants had asked permission to make improvements to their apartments on a cost-sharing basis. Professor Uhrent gladly supplied the materials needed for such improvements. The excellent results, which he obtained for minor investments in materials, added considerably to the attractiveness of the rental venture.

Professor Uhrent was an avid keeper of books. The Federal and state governments would have insisted that Professor Uhrent keep these particular books if he did not actually do so upon his own volition. Income taxes did not provide the main motivation for the professor's record-keeping by any means. The usual managerial control arguments for keeping books were also secondary in this particular instance. Professor Uhrent kept his record books on the Western Street house faithfully month after month in order to develop an unfolding story of results achieved in his real estate rental venture.

The Accounting System: Professor Uhrent kept a journal and a ledger along lines dictated by classic accounting tradition. He drew up quarterly balance sheets and income or profit-and-loss statements on a comparative basis. He drew up annual statements at the close of the calendar year, which statements he used for tax purposes. The accounts listed by Professor Uhrent in his looseleaf ledger book are reproduced below in detail:

E-1

1951 LEDGER

607-9 Western Street Rental Units

A. INCOME ACCOUNTS

RENT—1ST FLOOR (UNFURNISHED) (1)

Date	Item	Debit	Date	Item	Credit
			1/ 1/51		40.00
			2/ 1		40.00
			3/ 1		40.00
			4/ 1	15% increase by lease	46.00
			5/ 1		46.00
			6/ 1		46.00
			7/ 1		46.00
			8/ 1		46.00
			9/ 1		46.00
			10/ 1		46.00
			11/ 1	(1)	
			12/ 1	(2)	
12/31/51	P & L (3)				
	(4)			(5)	

RENT—2ND FLOOR (WITH UTILITIES) (2)

Date	Item	Debit	Date	Item	Credit
			1/ 1/51		79.00
			2/ 1		79.00
			3/ 1		79.00
			4/ 1		79.00
			5/ 1		79.00
			6/ 1		79.00
			7/ 1		79.00
			8/ 1		79.00
			9/ 1		79.00
			10/ 1		79.00
			11/ 1	(1)	
			12/ 1	(2)	
12/31/51	P & L (3)				
	(4)			(5)	

RENT—3RD FLOOR (FURNISHED) (3)

Date	Item	Debit	Date	Item	Credit
			1/ 1/51		60.00
			2/ 1		60.00
			3/ 1		60.00
			4/ 1		60.00
			5/ 1		60.00
			6/ 1		60.00
			7/ 1		60.00
			8/ 1		60.00
			9/ 1		60.00
			10/ 1		60.00
			11/ 1	(1)	
			12/ 1	(2)	
12/31/51	P & L (3)				
	(4)			(5)	

OTHER INCOME (SPECIFY) (4)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
			3/ 1/51	Value added to dining room by tenant, 2nd floor	45.00
			5/ 1	Value added to screens by tenant, 3rd floor	30.00
12/31/51	P & L (1)				
	(2)			(3)	

B. EXPENSE ACCOUNTS

DEPRECIATION EXPENSE (5)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/31/51		38.30			
2/28		38.30			
3/31		38.30			
4/30		38.80			
5/31		38.80			
6/30		38.80			
7/31		38.80			
8/31		38.80			
9/30		38.80			
10/31	(1)				
11/30	(2)				
12/31	(3)		12/31/51	P & L (4)	
	(5)			(6)	

PROPERTY TAXES (6)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/31/51	for J-Mar.	95.67			
4/30	for A-Jun.	93.91			
7/31	for J-Sep.	93.91			
10/31	for O-Dec. (1)				
			12/31/51	P & L (2)	
	(3)			(4)	

INTEREST ON G.I. MORTGAGE (7)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/31/51		19.99			
2/28		19.91			
3/31		19.83			
4/30		19.74			
5/31		19.66			
6/30		19.58			
7/31		19.50			
8/31		19.42			
9/30		19.33			
10/31	(1)				
11/30	(2)				
12/31	(3)		12/31/51	P & L (4)	
	(5)			(6)	

INTEREST ON PERSONAL LOAN (8)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
3/31/51	for J-Mar.	44.00			
6/30	for A-Jun.	44.49			
9/30	for J-Sep.	44.75			
12/31	for O-Dec. (1)		12/31/51	P & L (2)	
	(3)			(4)	

WATER EXPENSE (9)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
3/31/51	for J-Mar.	7.20			
6/30	for A-Jun.	8.88			
9/30	for J-Sep.	9.55			
12/31	for O-Dec. (1)		12/31/51	P & L (2)	
	(3)			(4)	

FIRE & LIABILITY INSURANCE EXPENSE ($1 FIRE, $1.30 LIAB. = $2.30) (10)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/31/51		2.30			
2/28		2.30			
3/31		2.30			
4/30		2.30			
5/31		2.30			
6/30		2.30			
7/31		2.30			
8/31		2.30			
9/30		2.30			
10/31	(1)				
11/30	(2)				
12/31	(3)		12/31/51	P & L (4)	
	(5)			(6)	

GAS & ELECTRICITY EXPENSE (2ND & 3RD FLOORS) (11)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/31/51		22.92			
2/28		20.51			
3/31		19.34			
4/30		20.94			
5/31		16.71			
6/30		16.28			
7/31		17.02			
8/31		17.39			
9/30		18.42			
10/31	(1)				
11/30	(2)				
12/31	(3)		12/31/51	P & L (4)	
	(5)			(6)	

FUEL OIL EXPENSE (2ND & 3RD FLOORS) (12)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/10/51		24.02			
2/ 1		31.28			
2/17		17.03			
3/ 8		23.10			
3/26		33.55			
4/30		21.63			
9/17		12.42			
10/31	(1)				
11/16	(2)				
12/ 5	(3)				
12/28	(4)		12/31	P & L (5)	
	(6)			(7)	

MAINTENANCE EXPENSE—MATERIALS (SPECIFY) (13)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
2/15/51	Decorate—2nd	19.82			
4/20	Screens—3rd	11.65			
7/ 1	Gravel, drive	5.00			
8/ 1	Spray, yard	1.50	12/31/51	P & L (1)	
	(2)			(3)	

MAINTENANCE EXPENSE—OUTSIDE CONTRACT JOBS (SPECIFY) (14)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/15/51	Drain	25.62			
3/31	Furnace	12.50			
5/ 2	Furnace	5.25			
8/ 1	Furnace	5.25			
8/15	Faucet	9.33			
8/30	Roof	15.00			
9/30	Plumbing	15.75			
11/ 4	Window (1)		12/31	P & L (2)	
	(3)			(4)	

MAINTENANCE—SIDING, ETC. (15)
(AMORTIZATION OF MAJOR SIDING JOB AND TENANT IMPROVEMENTS)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/31/51		15.56			
2/28		15.56			
3/31		16.06			
4/30		16.06			
5/31		16.46			
6/30		16.46			
7/31		16.46			
8/31		16.46			
9/30		16.46			
10/31	(1)				
11/30	(2)				
12/31	(3)		12/31	P & L (4)	
	(5)			(6)	

C. ASSET ACCOUNTS

CASH (16)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/ 1/51	Balance	534.81	1/10/51	Fuel oil expense	24.02
1/ 1	Rent—1st.	40.00	1/15	Drain—maintenance	25.62
1/ 1	Rent—2nd.	79.00	1/31	Interest—G.I.	19.99
1/ 1	Rent—3rd.	60.00	1/31	Principal—G.I.	24.19
			1/31	Gas & Electric	22.92
			1/31	Prop. taxes, Jan-Mar	95.67
2/1-10/30		1611.00	2/1-10/30		1086.80
	(all cash items lumped for brevity)				
			10/31	Prop. tax., Oct-Dec (1)	
11/ 1	Rent—1st. (6)		10/31	Int.—G.I. (2)	
11/ 1	Rent—2nd. (7)		10/31	Prin.—G.I. (3)	
11/ 1	Rent—3rd. (8)		10/31	Gas & Elec. (4)	
12/ 1	Rent—1st. (14)		10/31	Fuel Oil (5)	
12/ 1	Rent—2nd. (15)		11/ 4	Window-Main. (9)	
12/ 1	Rent—3rd. (16)		11/16	Fuel Oil (10)	
			11/30	Int.—G.I. (11)	
			11/30	Prin.—G.I. (12)	
			11/30	Gas & Elec. (13)	
			12/ 5	Fuel Oil (17)	
			12/28	Fuel Oil (18)	
			12/31	Int.—G.I. (19)	
			12/31	Prin.—G.I. (20)	
			12/31	Int.-Per. loan, Oct-Dec (21)	
			12/31	Water (22)	
			12/31	Gas & Elec. (23)	
			12/31	Bal. Sheet (24)	
	(25)			(26)	

PREPAID ITEMS (RECLAIMABLE)
(FIRE AND LIABILITY INSURANCE) (17)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/ 1/51	Balance	52.50	1/31		2.30
			2/28		2.30
			3/31		2.30
			4/30		2.30
			5/31		2.30
			6/30		2.30
			7/31		2.30
			8/31		2.30
			9/30		2.30
			10/31	(1)	
			11/30	(2)	
			12/31	(3)	
			12/31	Bal. Sheet (4)	
	(5)			(6)	

PREPAID ITEMS (SUNK COST)
(SIDING AND TENANT IMPROVEMENTS) (18)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/ 1/51	Balance	1212.82	1/31/51		15.56
3/ 1	Value added to dining room by tenant, 2nd floor	45.00	2/28		15.56
			3/31		16.06
			4/30		16.06
5/ 1	Value added to screens by tenant, 3rd floor	30.00	5/31		16.46
			6/30		16.46
			7/31		16.46
			8/31		16.46
			9/30		16.46
			10/31	(1)	
			11/30	(2)	
			12/31	(3)	
			12/31	Bal. Sheet (4)	
	(5)			(6)	

FIXED ASSETS (HOUSE AND LAND) (19)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/ 1/51	Balance	9530.80	1/31/51	Depreciation	38.30
			2/28		38.30
			3/31		38.30
4/ 1	Gas furnace, 1st. floor	144.00	4/30		38.80
			5/31		38.80
			6/30		38.80
			7/31		38.80
			8/31		38.80
			9/30		38.80
			10/31	(1)	
			11/30	(2)	
			12/31	(3)	
			12/31	Bal. Sheet (4)	
	(5)			(6)	

D. LIABILITY ACCOUNTS
PRINCIPAL ON G.I. LOAN (20)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
1/31/51		24.19	1/ 1/51		5996.17
2/28		24.27			
3/31		24.35			
4/30		24.44			
5/31		24.52			
6/30		24.60			
7/31		24.68			
8/31		24.76			
9/30		24.85			
10/31	(1)				
11/30	(2)				
12/31	(3)				
12/31	Bal. Sheet (4)				
	(5)			(6)	

PRINCIPAL ON PERSONAL LOAN (21)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
12/31/51	Bal. Sheet (1)		1/ 1/51		4400.00
	(2)			(3)	

DEFERRED INCOME (LIABILITY FOR FURNACE, 1ST FLOOR) (PURCHASE THROUGH RENT INCREASE) (22)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
4/ 1/51	(for April)	6.00	4/ 1/51		144.00
5/ 1		6.00			
6/ 1		6.00			
7/ 1		6.00			
8/ 1		6.00			
9/ 1		6.00			
10/ 1		6.00			
11/ 1	(1)				
12/ 1	(2)				
12/31	Bal. Sheet (3)				
	(4)			(5)	

EQUITY IN HOUSE (23)

Date	*Item*	*Debit*	*Date*	*Item*	*Credit*
			1/ 1/51	Balance	934.76
12/31/51	Bal. Sheet (2)		12/31	From P & L (1)	
	(3)			(4)	

E–2

Western Street House—Comparative Profit and Loss Statements, 1951 versus 1950

				Difference		
Income	1951		1950	+	0	—
Rental, 1st		(1)	480.00			(19)
Rental, 2nd		(2)	948.00			(20)
Rental, 3rd		(3)	720.00			(21)
Other Income		(4)	150.00			(22)
Total Income		(5)	$2,298.00			(23)
Expenses						
Depreciation		(6)	459.60			(24)
Interest—G.I. Loan		(7)	246.05			(25)
Interest—Personal		(8)	147.88			(26)
Fire & Liability Insurance		(9)	31.20			(27)
Property Taxes		(10)	349.76			(28)
Fuel Oil		(11)	264.17			(29)
Water		(12)	35.64			(30)
Gas & Electric		(13)	207.10			(31)
Maintenance—Material		(14)	62.86			(32)
Maintenance—Outside Contract		(15)	74.10			(33)
Maintenance—Siding Amortization		(16)	93.36			(34)
Total Expenses		(17)	$1,971.72			(35)
Net Profit (before income taxes)		(18)	326.28			(36)

E–3

Western Street House Comparative Balance Sheets
as of December 31, 1949, 1950, and 1951

Assets					Liabilities and Proprietorship				
Item	1949	1950	1951		Item	1949	1950	1951	
Cash	$ 249.76	$ 534.81		(1)	Deferred Income	$ 0.00	$ 0.00		(5)
Prepaid Items (reclaimable)	48.60	52.50		(2)	Fixed Liabilities: A. Principal on G.I. Loan	6,280.28	5,996.17		(6)
Prepaid Expenses (sunk cost)	0.00	1,212.82		(3)	B. Principal on Personal Loan	3,400.00	4,400.00		(7)
Fixed Assets	9,990.40	9,530.80		(4)	Total Liabilities	9,680.28	10,396.17		(8)
					Equity in House	608.48	934.76		(9)
Total Assets	$10,288.76	$11,330.93		(10)	Total Liabilities and Proprietorship	$10,288.76	$11,330.93		(11)

EXERCISES AND QUESTIONS

1. Construct in your notebook a full 1951 ledger, including all accounts (1–23), listed in Fig. E–1. October 1 totals of debits and credits for each account may be substituted for a full reproduction of detailed items, if desired. Include blank lines numbered (1), (2), (3), (4), (5), and so forth, as well as single and double horizontal lines.
2. Post the following journal entries for October 31 and November 1–30 to the ledger accounts:

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Western Street House Journal for October 31, and November 1–30, 1951 Page 14

1951		Account	Ledger Page	Debit	Credit
October	31	Property Taxes		$ 93.91	
		Cash			$ 93.91
		(Property Taxes for October–December)			
	31	Interest—G.I.		19.25	
		Cash			19.25
	31	Principal—G.I.		24.93	
		Cash			24.93
	31	Gas and Electricity Expense		19.34	
		Cash			19.34
	31	Fuel Oil Expense		22.93	
		Cash			22.93
	31	Depreciation Expense		38.80	
		Fixed Assets			38.80
		(Depreciation charge for October)			
	31	Liability and Fire Insurance Expense		2.30	
		Prepaid Items (reclaimable)			2.30
	31	Maintenance—Siding, etc.		16.46	
		Prepaid Items (sunk cost)			16.46
		(Amortization of siding charge for October)			
		Footings		$237.92	$237.92

1951		Account	Ledger Page	Debit	Credit
November	1	Cash		$ 40.00	
		Deferred Income		6.00	
		Rent—1st floor			$ 46.00
		(Rent, 1st, for November, including $6 earmarked for purchase of gas furnace by landlord from tenant)			
	1	Cash		79.00	
		Rent—2nd floor			79.00
	1	Cash		60.00	
		Rent—3rd floor			60.00
	4	Maintenance—Outside contract		6.41	
		Cash			6.41
		(For repair of window)			
	16	Fuel Oil Expense		23.45	
		Cash			23.45
	30	Interest—G.I.		19.17	
		Cash			19.17
	30	Principal—G.I.		25.01	
		Cash			25.01
	30	Gas and Electricity Expense		20.49	
		Cash			20.49
	30	Depreciation Expense		38.80	
		Fixed Assets			38.80
	30	Liability and Fire Insurance Expense		2.30	
		Prepaid Items (reclaim)			2.30
	30	Maintenance—Siding, etc.		16.46	
		Prepaid Items (sunk)			16.46
		Footings		$337.09	$337.09

3. Set up journal entries for the following transactions which occurred during December, and post these entries to the ledger (Figure E–1).

December 1. Received $40 cash for first floor rent, and earmarked the usual $6 extra toward purchase of gas furnace. Consider rental here as $46 equivalent.

December 1. Received $79 check for second floor rent.

December 1. Received $40 check and $20 cash for third floor rent.

December 5. Paid fuel oil bill amounting to $20.42 by check.

December 28. Paid $21.83 fuel oil bill.

December 31. Sent check for $44.18 to the bank, $19.09 of which was for G.I. mortgage interest and $25.09 of which was for G.I. principal due.

December 31. Paid $44.75 bill rendered for personal loan for October through December.

December 31. Paid $7.65 quarterly water bill in cash at local branch bank.

December 31. Sent in check for $22 35 to cover December gas and electricity bill.

December 31. Made depreciation, liability and fire insurance, and maintenance-siding entries in the usual manner.

4. Make balancing ledger entries to profit-and-loss statement (P & L) and to balance sheet (Bal. Sheet), as appropriate, for all ledger accounts as of close of work on December 31, 1951. Total all accounts, showing that they are in balance on the debit (Dr.) and credit (Cr.) sides.
5. Construct a profit-and-loss statement for 1951, (items 1–18), in your notebook, using the form illustrated for 1950 and 1951 in Figure E–2.
6. Log in the differences between 1950 and 1951 figures for various profit-and-loss statement items (items 19–36). Star (*) differences which appear to you to be significant.
7. Construct a balance sheet as of December 31, 1951, (items 1–11), in your notebook, using the form illustrated for 1949, 1950, and 1951 in Figure E–3. (Add the net profit earned in 1951 to account 23, "Equity in House.")
8. Identify balance sheet items in which significant changes occurred as between the years 1949 and 1950 and/or as between the years 1950 and 1951.
9. Using the profit-and-loss statement for 1951, list in column A those items which were actually sources of cash inflow for the enterprise. List in column B those items which actually drained cash away from the enterprise during the year.
10. Calculate a return on invested capital for the rental venture during 1950 and during 1951. Include both liabilities and proprietorship in your capital figures. Include both interest and profit in your calculation of the return.
11. Can you express quantitatively the extent to which "trading on the equity" through use of 4 per cent loans was advantageous to Professor Uhrent during 1950 and during 1951?
12. What valuation would the rental enterprise have in 1950 and in 1951 if earnings (including interest paid) are capitalized at 7 per cent?
13. Do you regard the depreciation policy and the siding amortization policy followed by Professor Uhrent as likely to err on the conservative side (i.e., tending to under-state profits) or on the liberal side (i.e., tending to over-state profits)? Assume that $1,000 of the fixed assets shown represents land value, and hence does not depreciate.

Section F. Business Policy

Let us proceed to try out our method of analysis upon a business policy case, the background of which should be quite familiar to readers of this text. Although the many months that have since elapsed brought events that clarified some of the basic issues involved, we should put aside the advantage of hindsight and consider this case as of the spring of 1951. This particular case was the topic for discussion on May 2, 1951, at a Syracuse University Business Policy Forum. More than 900 students, faculty members, alumni, Syracuse-area businessmen, and representatives of G.E. management were in attendance during the half-day case discussion. A condensed version of this illustrative business policy case reads as follows:

General Electric Company, Case C

The Exercise of Business Foresight by G.E. Electronics Park Management

INTRODUCTION

Management within the electronics department of the General Electric Company has been called upon to cope with complex business problems whose successful handling has required administrative skill of a high order. It has also been called upon to visualize future developments under circumstances which challenge the ability of management groups to exercise a satisfactory degree of business foresight. The young, dynamic radio-TV-electronics industry, in whose growth and development this G.E. management team has played a conspicuous part, is one of the most vigorous components of our American economic life. The pulse and tempo of American business generally may be captured through observation of the impact of change and progress upon the rapidly-growing electronics industry and upon the modern society which this industry is designed to serve.

The electronics department is but one of eight major departments which, taken together, comprise the General Electric Company. General Electric, with its apparatus, appliances, lamp, air conditioning, chemicals, neucleonics, electronics, and affiliated departments, is a sprawling industrial giant made up of 116 plants which turn out over 200,000 different products valued at more than two billions of dollars annually. This diversified company comes close to being "all things to all people." It has long been known as a supplier of huge dynamos, electric lamp bulbs and electric motors. Since the twenties G.E. has been designing and producing an ever-increasing line of electrical appliances, such as refrigerators, stoves, washing machines, irons, toasters, heaters, and other household conveniences. It also turns out massive diesel-electric locomotives, turbines, jet engines, and hundreds of other products for industrial and governmental purchasers. Moreover, G.E. scientists are constantly exploring the frontiers of knowledge in laboratory experiments involving nuclear reactions, new chemical compounds, and electronic phenomena so as to develop new products to meet evolving needs.

DEVELOPMENT OF G.E.

The General Electric Company was founded in 1892. Charles E. Coffin, one of the founders and one of America's great pioneer businessmen, became the first president. The young company's growth under Coffin almost kept pace with the phenomenal growth of the electrical apparatus industry itself, which had increased 2200 per cent in dollar volume of product per capita from 1880 to 1900, bringing about a veritable revolution during this period in American industrial and social life. Founder Coffin remained at the G.E. helm for three full decades, including the strenuous period of expansion which accompanied World War I and its immediate aftermath.

In 1922, the founder of the firm placed G.E.'s fortunes in the hands of a vigorous new management team composed of President

Gerard Swope and Board Chairman Owen D. Young, who shortly became two of America's best-known industrialists.

[There follows a brief summary of G.E.'s growth and development under Swope and Young to 1940 and under Wilson and Reed to 1950. For details, review chapter 6.]

On December 16, 1950, 64-year-old Charles E. Wilson, in resigning to head O.D.M., turned over the presidency of G.E. to 50-year-old Ralph J. Cordiner, the executive vice president who had been closely associated withWilson in planning G.E.'s present organizational setup. President Cordiner has been engaged in a high level reorganization of the Company which is at present still going on.

G.E. IN THE RADIO-TV-ELECTRONICS FIELD

G.E. has had a vital business interest in the development of the radio-TV-electronics industry ever since that general field was commercialized more than three decades ago. In addition, G.E.'s interest in radio, TV, and electronics from an experimental point of view dates back to the turn of the century. A number of G.E. researchers have been distinguished pioneers in this important field of applied science. Today, as always, many of the ideas that will have become commonplace a decade from now are having their first experimental beginnings in G.E. electronics laboratories.

[There follows a brief summary of G.E.'s role in the founding of R.C.A. in 1919, of the activities of R.C.A. during the radio boom, and of the forced separation of R.C.A. from G.E. control in 1932. For details, review chapter 4.]

G.E. started on the comeback trail in radio competition in 1935, when Ralph J. Cordiner, now president of the company, was named manager of G.E.'s radio division. He was succeeded in 1938 by Dr. Walter R. G. Baker, who was wooed back from R.C.A. by G.E. as head of its radio department with full responsibility for engineering, manufacturing, and sales, when Cordiner in turn succeeded Charles E. Wilson in the appliance and merchandise department. In 1939, Dr. Baker was named manager of the newly formed radio and TV department. In 1941 he became a vice president of G.E. with responsibility for its rapidly expanding electronics program. During World War II, Baker and the electronics department made a substantial contribution to our war effort while expanding G.E.'s electronics output many-fold. This output was, of course, measured in terms of such items as radar, sonar, field signalling and communications equipment, and ship and aircraft radios, rather than in terms of peacetime output. Nevertheless, a solid foundation of electronics skill and capacity to produce was built into the G.E. organization during this wartime period. [There follows a brief discussion of Dr. Baker's achievements as chairman of the Radio Technical Planning Board. For details, see chapter 6.]

Dr. Baker was thus instrumental in setting the fundamental framework for postwar electronics competition within and among the various media of communications.[1]

G.E.'S ELECTRONICS PARK DEVELOPMENT

During this period, G.E. was planning some spectacular postwar electronics developments of its own. By the war's end G.E. was carrying on electronics manufacture in parts of 22 widely scattered plants. The lack of a headquarters plant to provide leadership by example for units in the electronics department was regarded as a critical deficiency by G.E. management. Company experience with Nela Park near Cleveland as headquarters for the lamp department both pointed up the deficiency and set the pattern for electronics department development. As early as 1942 G.E. planners decided to build postwar a new Electronics Park plant along "campus" lines to serve as engineering, manufacturing, and marketing headquarters for satellite plants of the electronics department, as well as to become a large producer in its own right.

[There follows a brief account of the location of and construction of Electronics Park near Syracuse, New York. For details, review chapter 7.]

THE BUILDINGS AND THEIR "INHABITANTS"

The nine major Park buildings consist of three large manufacturing units, which house operating divisions of the electronics depart-

[1] *Business Week* (September 23, 1944), pages 30–31.

ment, and six smaller staff and service units, which house functions common to all of the line activities. The three large buildings are the receiver building, the commercial-equipment building, and the tube building.

[There follows a brief description of Electronics Park divisions and of the activities in which they customarily are engaged. For details, see chapters 6 and 7.]

With production ranging a) from large-volume, specialized machining and assembly work to low-volume, general purpose machining and assembly work in one direction, b) from household-size receiver sets to mammoth commercial equipment units in another direction, and c) from the receiver division's labor-dominated assembly operations to the tube division's machinery-dominated manufacturing operations in still another direction, it may readily be seen that the Electronics Park plant encompasses a wide range of production resources and contrasts.

DR. WALTER R. G. BAKER

Not only manufacturing, but the marketing, financial, control, personnel, research, and all other aspects of Electronics Park and electronics department activities are watched over by Vice President and General Manager Walter R. G. Baker. Dr. Baker's position with G.E. has twin aspects not often encountered in ordinary managerial posts.

As vice president in charge of electronics, he is heavily involved in policy-making and in problem-solving for the large and rapidly growing G.E. electronics program. He heads the sizeable line and staff organization that carries on electronics research, manufacturing, and sales. He must correctly appraise the needs of this group and present them to central management in New York and Schenectady. He must also interpret to his subordinates the essence of the communications channeled down from central management.

As general manager of Electronics Park, one of Dr. Baker's chief responsibilities is that of preparing proposals as to general plant policies for submission to central management. He must also direct his staff in the preparation of factual data and analytical material so that the central executives and board members can arrive at informed judgments. A second main responsibility he must shoulder is that of planning the execution of policies by his own management staff after they are approved by or initiated by central management. To ensure competency in the execution of policies, he must concern himself, thirdly, with the selection, training, and guidance of key management personnel to head various Electronics Park divisions.

A fourth responsibility of the general manager is that of molding his employees into a smooth-working team with integration of activities and coordination of effort. In order to measure progress and to be sensitive to developing needs, he must establish, fifthly, systems of written, verbal, and visual controls, which will yield readily the critical accounting and statistical data management needs as a basis for current action. Sixthly, he must continually be alert to changing conditions and must reappraise the adequacy of existing policies and procedures in light of the evolving situation.

The general manager is continually working with plant, equipment, materials, and products *through* people. He must be adept at organizing human beings for collective effort or else his knowledge of technical processes will prove of little avail. He must never let current success engender complacency either in himself or in his organization, because the forces of change soon undermine any rigidly set position.

[There follows a brief description of the planning of a new TV line. For details, review chapter 6.]

THE OUTLOOK FOR TV

The exercise of management foresight does not rest with a 6-month projection of market conditions that will be encountered by a new receiver model. The whole G.E. position in TV is based upon a much longer pull. G.E. market analysts have carefully charted the course they believe will be followed by commercial TV during the decade of the 1950's. These same analysts, looking over the shoulders of G.E. research scientists, are not entirely unaware that a decade of the '60's will follow that of the '50's. We may concentrate, however, upon this "intermediate long-run" projection problem at this juncture. In terms of action, much of G.E.'s program for TV is based upon the prospects for electronics industry growth and development during the current decade.

General Electric forecasters, in a market analysis completed early in 1950, used a liberal sprinkling of "guestimates" to fill in broad gaps in the known facts of the TV growth and development pattern. They had first asked prospective users of TV transmitters, such as AM broadcasters and newspapers, what they foresaw in the future.

These groups were not in a position to be overly specific either in regard to their own situation or with reference to the broader national picture. The major networks and the national association of broadcasters were also largely noncommittal in their responses to G.E. queries. The G.E. field organization also was of the opinion that the TV pattern for the coming decade had not crystallized in men's minds as yet. Therefore, the market analysts at Electronics Park determined that, if further visualization was to be attempted at this time, they must become their own crystal-ball experts, so to speak.

The market analysts readily gathered data on present TV channels and networks. They also knew the major outline of the proposed F.C.C. allocation plan for use once the "freeze" was lifted. They had available some helpful market data on AM and FM outlets in each market area, including power ratings and AM broadcasting revenues.

They then studied each market area in light of tentative F.C.C. channel allocations, checking each market for population, retail sales volume, present AM service, and significant geographical characteristics. Standards were evolved on economic and other grounds as a basis for estimating how many of the possible channels each area could support during the 1950's.

A major premise of this study, of course, was that defense needs would not absorb more than 10 or 15 per cent of our national income during this period, and that, therefore, materials needed for TV transmitters and receivers would be widely available. The study also assumed that the long-standing TV "freeze" on new stations would be lifted by the F.C.C. early in 1951.

In startling contrast with the total of 107 transmitters in existence in 1950, it appeared that 523 stations would be televising by the end of 1955 and that 666 stations would be operating at the close of the decade of the '50's. After 1951, color-TV transmission might well affect particular area estimates, but, because much of the forecast held good regardless of additional technical refinement of the system, it was thought that the over-all situation would not be basically disturbed by the eventual outcome of the color-TV question. All of this long-range market research was conducted primarily with an eye to giving G.E. customers what they want at the right time and price.

In similar fashion, G.E. market analysts endeavored to forecast receiver sales for the industry and for G.E. The growth histories of other new products, such as radio, the automobile, and the refrigerator, were not sufficiently dynamic to fit the unprecedented TV pattern that was already unfolding. Thus, G.E. had to devise a special forecasting technique for TV alone. Having useful figures for production and sales throughout the TV industry available, G.E. analysts attempted to break down demand forecasts into the following three categories: 1) new sales to families, 2) sales of second sets, 3) replacement of damaged and obsolete sets.

In making estimates, G.E. market analysts used *Sales Management* magazine's "Survey of Buying Power" data to judge potential sales by counties. They used growth experience in old TV markets, such as New York, Chicago, and Syracuse, and projected these results into younger markets. Replies to a G.E. warranty registration card question enabled the analysts to ascertain how many TV purchasers were second set owners. At this early stage of TV growth, the analysts estimated that approximately 1 per cent of existing sets would be destroyed or discarded each year.

The figures yielded by these three estimates were checked by the analysts against disposable income in hands of consumers and against factory capacity to verify their reasonableness. They appeared to be "in line." As of the spring of 1950, G.E. forecasters envisioned sales for the TV industry in excess of 6 million sets a year for the first five years of the 1950's.

Television would be paying its own way by drawing upon more than a billion dollars a year in advertising payments. Seven American families out of eight would be within range of TV transmission. Six of these seven families would actually possess sets. Between one and two families out of these six would have second TV sets in their homes as well. The cost of TV and the service it rendered would be up even beyond these high figures if the color question

and the ultra-high frequency channel question were satisfactorily worked out by both the F.C.C. and the industry at an early point in the new decade.

TELEVISION AND G.E.

Upon completing long-run and short-run forecasts, G.E. analysts translated their market potential figures into a proposed factory budget for the coming year. They used an assumed G.E. target figure, such as 18 per cent of the potential market, as the goal for which they would shoot in the short run. These figures were then broken down in detail to determine whether or not production could make and the field could sell the resulting quantities. Each of G.E.'s 50-odd TV distributors in the United States and Hawaii was given an annual quota based upon the following four factors:

1. *Sales Management's* Buying Power Index (B.P.I.).
2. The number of TV stations within the area.
3. The network or nonnetwork status of stations.
4. The strength of the signal within each county.

General Electric expected its distributors to sell relative quantities based primarily upon market potential rather than past performance. Actually, a real test of G.E. distributors' and dealers' TV sales ability did not come during the postwar 1940's, for dealers were typically on allocation, because the market would absorb more sets than G.E. factories could turn out.

Two principal aids to an effective sales program, which electronics department officials sought to cultivate, were the development of salable engineering features through product research and the forceful presentation of these features in an advertising campaign designed to build a concept of G.E. leadership in the TV field. G.E. scored a major success along product-development lines in 1948 when it introduced an aluminized tube that yielded a TV picture "at least 80 per cent brighter than conventional TV sets" of comparable size. Advertising quickly picked up this feature and described it as the "daylight television tube" because the viewer could observe the picture in full clarity in broad daylight.

A second G.E. engineering improvement of considerable merit was a new circuit design, which featured an "inter-carrier sound system." In this circuit design, the video carrier is used in place of the conventional local oscillator in the receiver. Because both the audio and video carriers are held to fine tolerances, the audio will not drift under this arrangement, but is present over the entire tuning range.

THE NATIONAL EMERGENCY

The G.E. market forecast for the 1950's was shaken abruptly in June 1950 when the North Korean Communists invaded their neighbors to the south. During five months of fierce combat, the Republic of Korea, aided by the United States and other United Nations forces, beat off this initial attack with brilliant success. The intervention of Chinese Communists in Korea in November 1950 dealt a death blow, however, to lingering hopes that Korea could be regarded as an isolated incident. By December 1950, it was clear the United States was again to become the "arsenal of democracy" as the free nations of the West undertook a rapid military build-up in an effort to stave off all-out Communist aggression.

The first stirrings of renewed government controls designed to convert the economy swiftly to a war footing came in the closing days of 1950. Upon the declaration of a national emergency by President Truman, G.E. not only lost its own president, Charles E. Wilson, to O.D.M., but it also lost its unrestricted right to set prices, adjust wages, and allocate materials as it saw fit. Government directives issued by Wilson's and other agencies, at first on a voluntary basis and then increasingly on a mandatory basis, began to set the tone for G.E. and other private industry operations. As spring approached, military contracts began to flow toward G.E. on a rapidly increasing volume basis. In the tight labor and materials markets, government-contract expansion inevitably cut into the output of civilian goods.

The electronics department staff at Electronics Park found itself face to face with a drastically changing and highly fluid situation. The forecast for the 1950's, which had posited a 10 to 15 per cent military budget, had to be reappraised as the military budget skyrocketed toward figures more than double the allowed range. Moreover, the free economy in which the F.C.C. was to release ultra-high frequency and color TV now shaped up as a controlled military economy in which mass production of

peacetime luxury goods was not to be unlimited.

Early G.E. expansion in the electronics field took the form of increased hirings at already-crowded Electronics Park, supplemented by the re-opening of small assembly plants at nearby Utica and Clyde. New construction was also planned for 1951 at Electronics Park, itself, and at Auburn and Utica where labor was thought to be less scarce. The major portion of the wartime G.E. plant at Thompson Road in Syracuse had been sold by the government to Carrier Corporation and to Syracuse University. Only a small section would be available for G.E. use during the current emergency.

Greatly stepped-up production on a full, 3-shift basis at Electronics Park might be, to some extent, a short-run alternative to multiplication in numbers of satellite plants carrying on similar activities. Greatly expanded physical facilities at Electronics Park would be required, however, if a long-run policy of expansion at the home plant were to be stressed in order to minimize reliance upon new satellites. The familiar subcontracting pattern of World War II days was naturally under consideration as the new emergency struck home. The absence of adequate signals from Washington as to what lay ahead, plus the possibility that known emergency-expansion needs might blend well with known long-run expansion needs of G.E. itself, kept the subcontracting program from moving ahead in high gear.

The impact of emergency contracts upon G.E.'s normal program of pure and applied research was also difficult to evaluate at this time. G.E. had managed to build great strength in electronics engineering in the course of fighting World War II. Military contracts might rapidly absorb the energies of G.E.'s entire engineering research staff if policies were not evolved to keep a spark of postemergency thinking alive. Even military projects had a way of suggesting basic improvements, indirectly applicable to peacetime products. Yet the shift in engineering objectives that accompanies wartime product development tends to retard potential development along peacetime lines.

With the draft stepping up in volume of calls during 1951, G.E. personnel officials anticipated a severe shortage of manpower at all levels. The company's policy of paying wages consistent with the prevailing wage level in the community, as opposed to attempting to pay the highest rates in the area, as part of its broad "community-relations" program, would not now permit G.E. to siphon off high-grade employees from other industries and companies on a wage basis, even if G.E. were of a mind to expand its force by such means.

As in World War II, G.E. management felt that labor's ranks would be swelled, or at least maintained, by an influx of unskilled female workers. Although Electronics Park had experienced a costly 24-day strike during September 1950, no serious aftermaths of the dispute were to be noted. It was felt that necessary changes in shifts, hours, methods, or working conditions, which could be clearly related to the national emergency, would be accepted by the work force with good grace.

To the extent that G.E. attempted to retain its high-level production of consumers' goods, new facilities would be required in increased magnitude for expanding government orders. As in World War II, G.E. management anticipated that alternative methods of financing new facilities would again be proffered to cooperating companies. The nation's productive plant was, of course, greatly expanded in 1951 over 1941 as a result of growth that took place during World War II and the postwar boom of the late 1940's. To the extent that immediate military production was needed, conversion of existing facilities would be a fruitful approach. If time permitted, however, it appeared that plant expansion would play a key role in the current emergency, just as it did in World War II.

Washington had not yet made clear its plans for "bricks and mortar" in the electronics field. Government financing agencies, such as Defense Plant Finance Corporation (D.P.F.C.) of World War II fame, were not yet active in the field. Government policy with regard to accelerated depreciation of emergency plant and equipment was also in need of clarification. In two instances, G.E. was already simply supplying management and technical personnel for the operation of government-owned plants. This arrangement pertained to the special case of the G.E.-operated Knolls Atomic Power Laboratory near Schenectady and the Hanford Works at Richland, Washington.

Possible cutbacks in civilian production of TV sets would, of course, have adverse effects upon G.E. distributors and dealers. Market conditions had not been "normal" in the TV

field since G.E. marketed its first set in February 1947. In 1947, the company sold several million dollars worth of sets to distributors in 13 TV cities. In 1948, sales to distributors in 30 TV cities increased more than 4-fold over the 1947 figure. Sales volume in 1949 to distributors in 55 TV cities was approximately double the 1948 total. In 1950, sales of sets to distributors in 65 TV cities were again more than double sales for the previous year. G.E. entered 1951 with a television marketing organization that consisted of 53 distributors and close to 10,000 dealers. In comparison, there were close to 30,000 G.E. radio dealers.

Throughout the developmental years listed above, G.E. TV distributors and dealers were on an allocation basis. With minor exceptions, TV demand exceeded G.E.'s supply. As dealers typically carry several lines of radio and television sets, their loyalty to any one firm, such as G.E., is not exclusive. G.E. must, nevertheless, do what it can to cultivate the "leading" dealer outlets within a community so that it would be in a favored position when the day of the seller's market in TV is ended. In one sense, G.E.'s market position both with dealers and with the consuming public would be adversely affected, relatively, as well as absolutely, to the extent that the company outstrips its competition in the conversion of facilities to military production.

DECISION-MAKING

As was noted earlier, Dr. Baker's position with G.E. has twin aspects. As vice president in charge of electronics, he heads the sizeable line and staff organization that carries on electronics research, manufacturing, and sales. He must correctly appraise the needs of this group and present them to central management in New York and Schenectady. He must also interpret to his subordinates the essence of the communications channeled down from central management.

As general manager of Electronics Park, one of Dr. Baker's chief responsibilities is that of preparing proposals as to general plant policies for submission to central management. A second main responsibility of the general manager is that of planning the execution of policies by his own management staff after they are approved by or initiated by central management.

[There follows a brief description of the process by which central management in G.E. arrives at policy decisions affecting various ones of the eight major departments of the firm. For details, see chapter 6.]

TOPIC FOR DISCUSSION

What action should G.E. management take with regard to electronics as of the spring of 1951?

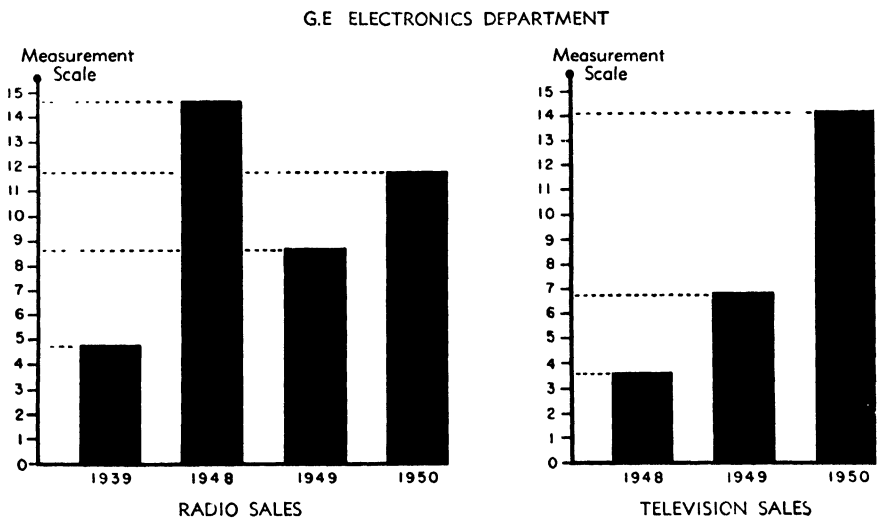


Figure F-1.

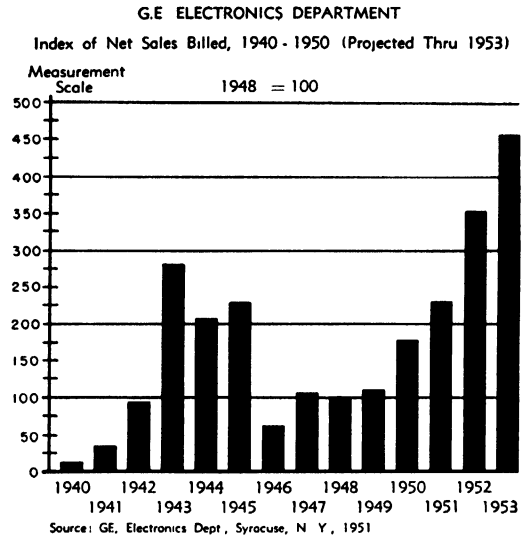


Figure F–2.

ELECTRONICS INDUSTRIES — SALES IN UNITS

	Radio	TV	Total
1946	16,014,387	5,367	16,019,754
1947	20,121,563	152,106	20,273,669
1948	15,889,685	944,024	16,833,709
1949	10,327,820	2,909,098	13,236,918
1950	13,636,201	7,014,580	20,650,781

Source GE, Electronics Dept, Syracuse, N Y, 1951

Figure F–3.

Illustrative Analysis of G.E. Electronics Department Case

The following illustrative analysis of the G.E. electronics department case applies to a concrete body of data the method of analysis developed earlier in this text. Through observation of the handling of this particular case the reader may clear up certain points as to method which a description of method of analysis in the abstract might not fully cover.

SYRACUSE UNIVERSITY
COLLEGE OF BUSINESS ADMINISTRATION

Summary of the Proceedings
of the
General Electric Business Policy Forum, May 2, 1951 [2]

On May 2, 1951, more than 900 students, faculty members, alumni, Syracuse area businessmen, and representatives of G.E. management gathered in Hendricks Chapel for an all-morning business policy forum. The topic for discussion was a Syracuse-gathered business-policy case study entitled "The Exercise of Business Foresight by G.E. Electronics Park Management." The 18-page case dealt with short- and long-run problems of adjustment by G.E. electronics department management to requirements of the current, national-emergency period.

Chancellor William P. Tolley welcomed the audience and the company representatives on behalf of the university. Dr. Walter R. G. Baker, G.E. Vice President and General Manager of the Electronics Department, responded on behalf of the company, and told of company progress in coping with the very problem which was at issue in the convocation. Assistant Dean Morris E. Hurley and Mr. Ernest H. Vogel, Manager of Marketing, Electronics Department, opened the discussion and analysis of the G.E. case study.

[2] The College is indebted to Assistant Professor Dorothea Chandler and eight of her Secretarial Science majors whose competent transcription of the proceedings of the G.E. Convocation has served as the basis for this summary of ideas presented.

Four simultaneous student workshops were then convened in nearby auditoria to discuss production-personnel, marketing-advertising, finance-control, and organization-policy aspects of the case problem. Thirty-two senior and graduate students in the College staffed the workshop panels. Student Convocation Chairman Donald Stites and four workshop reporters closed the formal program in the Chapel with a discussion of workshop findings and recommendations. Numerous questions and comments from the floor were then discussed.

It is anticipated that the business policy forum will become an annual event with Syracuse banks, department stores, and manufacturing establishments cooperating in staging the events in successive years.

The following is a summary of some of the ideas and views that were presented at the May 2 forum:

CHANCELLOR TOLLEY

Chancellor Tolley pointed out that there has always been a close relationship between commerce and culture. He cited Athens, Alexandria, and Rome as early commercial centers that, within a few decades, became cultural centers as well. The Chancellor expressed his belief that the United States may well become the cultural, as well as the commercial center, of the world. He pointed to the record of close cooperation between the University and business, with particular reference to the G.E. Company. Chancellor Tolley thanked Dr. Baker, his four department heads, and their many assistants for contributing time, energy, and interest to make this convocation possible.

VICE PRESIDENT BAKER

Dr. Baker indicated the belief of his staff that discussion of case problems with students and faculty members was well worth the time involved. It helps management men clarify their own thinking. He emphasized the importance of the fact that all problems of industry are created by men, handled by men, and resolved by men. He pointed out that his staff had been engaged for the past 4 or 5 months in working on the management problem that is the topic for discussion during the convocation. Although conceding that many uncertainties were involved in any such project as a 5-year projection of G.E. electronics department operations, Dr. Baker assured the audience that management efforts to look ahead at least this length of time were very much worth while.

ASSISTANT DEAN HURLEY

Mr. Hurley raised for discussion specific aspects of the business policy case. He indicated that significant problems of business administration are typically interdepartmental in nature. They affect one department in relation to other departments or in relation to great outside events that impinge upon the business as a whole. In many instances, the businessman's greatest problem is simply that of being able to visualize problems in their wider ramifications. Mr. Hurley discussed some external and internal considerations that help to set the stage for the business policy problem at issue in the day's discussion.

On the external side, he discussed 1) the nature of the general field of business involved—radio-TV-electronics, 2) the distinctive characteristics of the general field as a branch of American industry, including scientific competence needed by firms, mass-production and distribution opportunities, and "one-at-a-time" production and "made-to-order" marketing aspects, and 3) the outlook for the American economy and for this industry as of the cutoff date of the case.

On the internal side, he discussed 1) the role that G.E. plays within the electrical industry, including its leadership and public-relations responsibilities, 2) the relationship of electronics to the total business of the firm, pointing out that the electronics department is but one of eight departments comprising the firm as a whole, and 3) the degree of freedom of action enjoyed by the electronics department within G.E., indicating both its wide scope for independent administrative action and its basic responsibility to central management. Mr. Hurley foresaw an opportunity for the electronics department to grow in relative importance within G.E. by shouldering its full share of the new load that the national emergency places upon the productive capacity of the company.

MR. ERNEST H. VOGEL, MANAGER OF MARKETING

In opening his analysis, Mr. Vogel reminded the audience that the question given in the case, namely, "What action should G.E. management take with regard to electronics as of the spring of 1951?" was a rather complex matter at this time. It is necessary to review the situation to date and to understand past and current policies, as well as expected policies for the future. Mr. Vogel described the great promise of the electronics business independent of the Korean crisis. The current plan is that the industry shall superimpose on a very substantial consumer base the great emergency defense demand.

He listed some "symptoms" of possible difficulties with which management must cope, as follows: 1) manpower supply is becoming increasingly tight, 2) over-all facilities are already being heavily taxed to meet demand, 3) the electronics department is presented with problems involved in opening additional plants at other places, 4) manpower problems of training, increasing work hours, and increasing work shifts have also become serious, 5) we are beginning to feel the effect of government control of prices, wages, and materials, 6) government contracts call for trained engineers to work with military equipment, who have, to date, been working on civilian products, 7) the company's supervisory resources are being taxed by increased responsibilities, 8) possible changes in shifts, hours, methods, and working conditions will have to be explained to and accepted by the working force, 9) alternative methods arise for financing new facilities, 10) pressure for increased production of all types of electrical goods is coming at a time when expansion is difficult to achieve.

Mr. Vogel stated the underlying causes giving rise to these symptoms and then formulated the problem statement of the case as follows: 1) In the short run, the G.E. electronics department has the dual problem of adjusting its normal operations to square with the new situation regarding supply of materials, manpower, and facilities for civilian use, and of adjusting its manufacturing facilities to take care of government military orders which are to have priority. 2) The long-range problem of the company is so to arrange its military-production program, wherever options do exist, that the electronics department of G.E. will be in a strong position to compete in TV and in allied electronics fields when the post-emergency period arrives.

Mr. Vogel envisioned establishment of an entirely new plateau in civilian production, postemergency, and posed these questions for the electronics industry: Where shall we emerge? On what plateau and in what relationships to other industries? What line of products should G.E. develop and how much should be produced? What facilities are needed to produce this volume? Where should the new facilities be located? Can provisions be made for defense plant conversion? What are the needs for engineering, manufacturing, and marketing? All of these questions must be projected.

WORKSHOPS

[Workshop discussions have been omitted from this presentation in the interests of brevity.]

FINAL SESSION

Statement of Recommendations, by Donald Stites

Dr. Baker told our workshop groups that his management group exists for two basic purposes: one, to break bottlenecks, and, two, to plan for future operations. Assistant Dean Hurley told us today of the particular corner of the particular field of endeavor in which G.E.'s electronics department operates. Mr. Vogel has described some symptoms and causes of problems encountered by the G.E. electronics department management. He then stated that the central problem of this case is divided into two areas—the short run and the long run.

In the short run, there is the dual problem of: 1) adjusting normal electronics operations to square with new conditions that accompany the emergency, and, 2) adjusting manufacturing facilities to take care of government priority orders. In the long run, the company has the problem of so arranging its military production program, wherever options exist, that the electronics department will be in a strong position to compete in TV and in allied electronics fields after the present emergency has passed.

Our four workshops have taken up departmental and some interdepartmental and organizational aspects of this over-all business policy problem. I should like to place stress on the

importance of proper sequence and timing of moves by G.E. management in meeting this problem situation.

1. We recognize the fact that, if each electronics department division, such as marketing, production, and finance, were to do its thinking about the present emergency and the period following this emergency within its own water-tight compartment, the organization as a whole could not long remain on an even keel amid rapidly changing conditions. A special committee status should, therefore, be given to interdepartmental staff planning focusing upon the national emergency and its aftermath. Setting up this machinery in smooth working condition is an essential task for top Electronics Park management.

This emergency planning committee should: a) meet frequently to discuss its agenda, b) blend and reconcile short-run necessities with long-run aims when possible, c) visualize post-emergency conditions within the electronics industry under a series of "more probable" and "less probable" assumptions, d) pay particular heed to facilities expansion proposals so that a trim, balanced, electronics-manufacturing establishment will emerge in the postemergency period.

2. Other similar emergency-planning committees within existing divisions should be set up and assigned general tasks at this time as well. Special staff assignments to individuals and subcommittees will facilitate progress.

3. The special committees should keep electronics department general management informed of progress being made, of procedures being followed, and of the *reasoning* underlying recommended actions, as well as of proposed actions themselves.

4. Preliminary moves designed to keep open the possibility of executing any one of several alternative plans should be authorized, whenever feasible, even if the total cost of whatever program is eventually adopted will thereby be raised by a significant fraction. Thus, the company will be in a position to follow rapidly and easily the plan that, in the light of future conditions, will prove most advisable.

5. Information as to actions taken should be passed along to interested groups within the G.E. organization at the earliest possible date so that future planning may take these new facts as points of departure.

6. The major moves themselves may then be executed at the appropriate time.

7. The matter of "follow through" for executive control is of unusual importance during unsettled times. Normal reports and controls may not be sufficient to control this abnormal situation. Special reports, above and beyond normal routine reports, may be needed in almost every problem area. It will be the job of the special committees to submit their special reports.

Top management must be alert to signs of inflexibility or lack of imagination on the part of other management personnel. Management should be ready to transfer personnel to other duties so that the right person is currently placed in the right job. The over-all committee should review the adjustment of the electronics department and its various divisions to abnormal conditions. It will be one of the tasks of this committee to advise the divisional committees of plans in other areas that will or may affect their action. Thus, this over-all committee has special supervisory, co-ordinating, and advising duties that focus particularly upon problems arising from the national emergency.

8. Plans and risks should be reappraised and reworked frequently from a highly critical and somewhat sceptical point of view, in order to determine whether or not underlying factors have shifted to an extent that might merit a change in plans.

This G.E. study is simply one of an endless line of possible business policy cases. It is the method of analysis of business problems that concerns us particularly. It is important that the business executive make some provision, within his business organization and within his own mental organization, for the systematic analysis of business problems as they arise—or preferably long before they actually do arise. The purpose of this convocation has been to try to illustrate how these business problems may be faced in a general way. The final, and specific, conclusions will naturally be determined by the particular facts that may arise.

FLOOR DISCUSSION

[There followed a half-hour discussion of questions raised by the audience. Illustrative questions are as follows:]

Question 1. Would the panel discuss a possible technique for merging the marketing, production, and finance department points of view?

Will production, for instance, be in direct relation to the decisions rendered by the marketing executives?

Question 2. In top policy planning, how have the radio division and TV division combined their promotion and production problems, *i.e.*, is TV cutting in an unplanned manner into radio sales and production?

Question 3. Is there a practice in the company of top personnel training assistants to take over a position when it is vacated, *i.e.*, is there an understudy method for training executives?

Question 4. Assuming that changes will occur in the G.E. structure, what means are available for communication between management and labor?

Question 5. From a policy point of view, does G.E. seek to maximize its share of the total electronics industry as a long-run objective? Some firms, such as General Motors, do not wish to dominate their industries to an increasing extent even if they could do so.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	465–476	Describe several key external and internal factors that had bearing upon the G.E. electronics department case as of the spring of 1951.
2	465–476	Present your personal size-up of the electronics department case, including "symptoms of difficulties," "underlying causes giving rise to these symptoms," and "the problem statement."
3	465–476	What major alternative courses of action were open to G.E. electronics department management, as of the spring of 1951, as it formulated its short-run and long-run plans?
4	465–476	What action should G.E. management take with regard to electronics as of the spring of 1951? Develop a 500-word action report for submission to Dr. Baker.

Section G. Social Responsibility of Business

I. A Latter-Day Veblenite: T. K. Quinn, Ex-G.E. Executive

T. K. Quinn (1894–), a former General Electric Company executive who quit his high post as a vice president after 25 years of company service, has written a sharply-worded indictment of so-called "monster business." Quinn's monograph, entitled *I Quit Monster Business*,[1] denounces bigness *per se* in the grand Veblenian manner. Quinn's 1-sentence preface is quoted in full herewith as follows: [2]

I quit monster business because it is undemocratic, because it is inhuman and not socially responsible, because most of it is big only for the sake of bigness or for purposes of concentrated power and control, because it is inefficient and corruptive, because it is causing a dependent society where only masses count, genuine individual freedom languishes and opportunity and expression are restricted, because it glorifies leaders whose interest is too much in themselves, and because through its essentially collectivistic forms and methods and mockery of "free enterprise," it is leading our country just as surely as the sun sets to a brand of totalitarianism which is a perversion as far from individualism, civil liberties and the democratic process as Russian Communism.

T. K Quinn started to work for a subsidiary of G.E. as a factory hand in 1911 at age 17. He earned seven dollars a week initially. Quinn studied law nights while serving successively as a foreman, billing clerk, bookkeeper, and auditor. Upon passing the bar examination at age 21, Quinn rejoined G.E. at double salary as credit manager of the G.E. lamp department at Nela Park, Cleveland. He served as assistant general manager of the lamp department during the middle '20's, and became manager of the G.E. refrigerator department in 1927. In 1930, Quinn became a vice president of the company. By 1934, Quinn considered himself a likely candidate to succeed Gerard Swope as chief executive upon the president's eventual retirement.

Quinn became increasingly unhappy with his career in "big business," however, for he was emotionally inclined to take the part of the "underdog" in social and economic matters. He felt that big business, his own G.E. Company included, played too powerful a role in our society. Moreover, Quinn did not entirely approve of G.E. objectives, standards, and practices. Some of the alleged injustices about which he acquired strong feelings may be summarized as follows: [3]

Like other giant companies, we were at pains to tell the world that no one stockholder owned more than 2 per cent of the company. This was the truth and nothing but the truth, but not the whole truth. . . Less than 15 per cent of our stockholders controlled over 80 per cent of the stock. . . . The company . . . had departments and lines of business which were involved in monopolies and international cartels. We were marvels at making large profits in these departments and covering deficits in others where some degree of competition prevailed. This is one of the worst practices in American business because it means that the monster corporations can enter any field of business and undersell or out-advertise, with the blessing of our anti-trust laws, absorbing losses in the profits of other departments or subsidiaries and continuing this way while the smaller single line competitor is forced out. . . . Hundreds of thousands of businesses live, therefore, by sufferance of the monsters which could wipe them out at will.

Quinn then goes on to explain in detail how the tremendous power of General Electric and General Motors gives them effective control of the pace and prices at which such items as electric refrigerators and other electrical appliances are to be manufactured. Quinn sums up his position as follows: [4]

Whether in refrigerators or electric lamp bulbs, with or without patents, a fundamental rule is never to lose relative position. If some "upstart" appears, pay no attention to him until it seems that he may be dangerous, then "give him to under-

[1] T. K. Quinn, *I Quit Monster Business* (privately published), 1948.
[2] *Ibid.*, preface.
[3] *Ibid.*, pages 3-4.
[4] *Ibid.*, pages 4-5.

stand." So quickly does the little fellow see the light that it is seldom necessary to cut competitive prices below cost which only the monsters are in position to do any length of time. What I have here stated regarding refrigerators and lamps, competition and prices may be considered typical of most of American business today. In many if not all fields where the little fellow survives at all, it is because he is so permitted When I state and purposely hereafter repeat that we no longer have in this country anything like the free enterprise or open opportunity of which we speak so proudly, I am basing my statement on experience. Those of us who feel a greater allegiance to our country and to mankind than to any private employer have a clear duty to perform wherever the interests are obviously opposed.

T. K. Quinn, unlike many others who suffer intermittently from doubt as to the efficacy of their fundamental working rules, decided to resign his position, rather than to aid his "misguided" company further. He conceded that "true, my employer was actually no worse and no better than other monster corporations," but he asked "how would helping to make it grow even bigger by crushing smaller competitors, if need be, serve any socially worth while purpose?" [5]

Although his associates in General Electric urged Quinn to reconsider, he executed his plan to "quit monster business" on January 1, 1936. Quinn became active in the advertising business until World War II, when he joined the War Production Board as a dollar-a-year man. Since the end of the war, Quinn has been organizing certain independent manufacturers and distributors into a cooperative company that "undertakes to secure for its associated member companies some of the commercial advantages of size without sacrificing their separate existence or complete independence.[6] He also operates his own management company. These activities fit into Quinn's master plan for decentralizing American business until it squares with "the kind of liberty and independent existence around which our great democracy has developed." [7]

Some of the overriding statistical data that precipitated Quinn's rebellion against "things as they are" were published by Berle and Means in their widely-read book, *The Modern Corporation and Private Property*,[8] in 1932. These "revelations" were later spelled out in the Temporary National Economic Committee hearings and reports in 1937 and 1938, and in Senate Monopoly Investigating Committee proceedings subsequent to World War II.

Quinn states that "*The Modern Corporations* [sic] by Berle and Means (1932) woke me up while I was slumbering peacefully under the protective umbrella of my fabulously rich employer. I saw confirmed, among other things, what I had long known, that two men were in absolute control of our corporate monster. Mr. Berle . . . estimated that no more than 200 companies then owned half the wealth of the country, which has never seemed quite the same to me since." [9]

Quinn asked himself "what in the world has been going on and why?" He found, in the course of his studies, that his "own monster alma mater was as typical an illustration as any," as follows:

> In the beginning, [G.E.] was a J. P. Morgan company. [For a revealing account of how Morgan got its means and credit, see *Other People's Money* by Justice Brandeis.] Troubled by an upstart competitor in the incandescent lamp business, we simply bought the competitor outright, and afterwards bought many more. We bought an electric motor company, a turbine manufacturer, an electric switch manufacturing company, a vacuum cleaner manufacturer, an electric clock manufacturer, an insulator manufacturer, a manufacturer of generators, a steel manufacturer, a range manufacturer, dozens of distributing companies, etc. . . . We called ourselves an electric manufacturing company but, in our horizontal expansion and acquisition, we were more like a big investment banking concern. The subsidiaries quickly lost their identity and the monster grew and grew. Presidents resigned or became department managers, independent companies became divisions, people became numbers, individuals became masses, and we called it success. We were only doing what a score of other monsters were doing in their fields. Any assumption that these purchased companies in our hands were more efficient or more profitable would be quite mistaken. All other conditions being equal, I should

[5] *Ibid.*, page 3.
[6] *Ibid.*, page 5.
[7] *Ibid.*, page 5.
[8] Adolf A. Berle, Jr., and Gardiner C. Means, *The Modern Corporation and Private Property*, New York: The Macmillan Company, 1932.
[9] Quinn, *op. cit.*, page 6.

say that without exception our management being more remote and less informed was less effective. But as independents these companies were strictly on their own. In our monster house any of their deficits were more than covered by other profits. . . . We purchased only successful companies and principally those in need of capital which, notwithstanding their inherent worth, was not available to them. Thus the potent force was money and credit, wealth, and not necessarily merit, justice or value.

Our directors were handpicked by the management, and the qualification test was whether they were in position to influence business our way. Many a competitor wondered why he could not prevail against us when he had a better product and a lower price.[10]

Quinn is against "bigness" in government and in labor, as well as in business. He wishes to take care of "first things first," however, stating that "plans to cut governmental expenditures, reduce taxes and regulate trade unions may be noble enough in intent but the place to strike first is at excessive, concentrated, private economic power which is the cause of big unions. . . . Collectivism in industry begets collectivism in government. It is a collectivism which is only a few steps removed from collectivism as it is now practiced in Russia. . . . Those of us who wish to see our traditional American freedoms continued and honest free enterprise maintained for the many, as well as for the few, must act promptly to avoid the oncoming socialization of the entire country. . . . Are we to wait passively and stupidly like the Bourbons of France for the deluge? . . ."[11]

Some of T. K. Quinn's specific complaints against monster business may be listed as follows:

1. One of the fallacies standing in the way of action to prevent further concentration of power and wealth is that bigness in business is self-corrective, and that when it reaches a point where the curve of efficiency turns down because of size, it will stop expanding, decentralize or go broke. This is very seldom if ever true. No matter how inefficient General Motors, DuPont, Standard Oil of New Jersey, Metropolitan Life, or any other of their size or importance might become, they could not be permitted to fail. They are too integral a part of our whole economy—quasi public institutions. . . .

2. Big monopolistic business drives government closer to the totalitarian state. And size is more than an invitation to monopoly—it is a practical requirement. . . .

3. The bigger the corporation the less the opportunity for developing individual initiative or giving the worthy a chance. . . .

4. Present methods of handling mass production workers in huge corporations and treating them as mere impersonal "labor," rather than as human beings, practically precludes their advancement to executive positions of any kind. A frank admission of this defect is to be found in the programs now adopted by a number of huge companies which hire groups of young college graduates and give them special training for the better jobs that, under existing conditions, cannot be filled from the ranks. The effect of this practice is to establish fixed groups or classes like the old feudalistic system which is a far cry from the democracy of which we boast or the free enterprise we advertise.

5. A monster corporation may have a hundred factories and offices. Its leaders have an almost impossible job when it comes to locating promising young talent. They must depend upon recommendations which come to them from down the line. . . . There are many thousands of promising young men in monster companies who never get a chance and whose talents are lost to society because of the complex nature and oversize of these economic organizations. . . . It is not strange that Walter Reuther, and others like him, were buried in monster organizations for years. I was once commissioned to see Reuther and sign him up as an officer of a monster company in charge of employee relations. I never even approached him on the subject, feeling that he was more socially valuable, under present conditions, as a union leader. Although I was in a position to offer him over three times his salary at the time, I do not believe he would have accepted. . . .

6. In monster corporations, as in the army, the tendency is to promote employees because they happen to be next in order and not because they are best fitted for the work, and to pick them from staff men known to the officers and directors rather than from the rank and file. This explains the mediocre crop of managers and officers in many huge organizations who compare so unfavorably with the heads of much smaller companies. . . .

7. Similarly, the tendency in monster corporations is to compensate employees on the basis of the position held rather than according to the value of services rendered. The result is that the best men leave and the poorer ones remain to lower the average of ability in the organization. . . .

8. The game among subordinate managers and

[10] *Ibid.*, pages 6–7.
[11] *Ibid.*, page 9.

officers all the way up to the president in monster organizations becomes one of cooperating with each other only to please superiors and get more recognition. Cooperation for accomplishment tends to decline.

9. Even in the attainment of the ultimate top jobs there is no genuine satisfaction. Reputation becomes dependent upon manipulated publicity. The corporation is so big that it is depersonalized. The individual from the top down is a spiritual wanderer on the wrong side of a high fence pursuing a progress that never satisfies him. . . .

10. Any company in which the directors are not sufficiently well acquainted with the key men and managers to identify and recognize them is too big. Any factory in which management does not know by name and record every worker in the plant is too big and undemocratic.

11. It is not generally realized that our monster private corporations are already collectivistic in their organization forms and in their methods and techniques. Their management and control is self-perpetuating, and, in this respect, like that of Stalin and his associates. Individual small stockholders, regardless of what they may together own, are, in fact and in practice, as ineffective as Russian peasants insofar as control of the affairs of the giant corporations are concerned. . . .

12. The practice of supporting losing departments of a giant corporation out of the profits of other profitable departments, or of deliberately cutting prices for competitive advantage in one place and making it up in another is unfair and destructive from the standpoint of the whole economy. . . .

13. You may be certain that in the process of purchasing subsidiary companies and organizing combinations no thought is given to whether the result will serve the public interest. . . . Stripped of all pretense, the primary purpose is more profit, power and control where it is not done merely to enhance and brighten the record of individuals with notions of grandeur. . . .

14. We have passed the point where merely checking further combinations will alone accomplish the desired result. The monsters must be unmerged . . .

15. Every public purchase of the product of a monster company is a vote in favor of that monster but who is there to remind the public of this fact? Would you do it if you were a publisher dependent upon the monsters for the advertising revenue that supports your paper? . . . As able and objective an historian and observer as Professor Charles Beard has said "Ours is now and is destined to be a great continental, technological society, and the trust-busters, however honest and honorable, are just whistling in the wind." But, presumably the professor did not mean to condone the practices enumerated above nor to endorse monopoly. If he did, then he might as well have added that we can kiss goodbye to democracy and free enterprise. . . . We can be "a great continental, technological society" without being serfs to a few economic lords.

16. Monster corporations and their officials are quite self-conscious. They know that they do not quite fit into the American pattern of independence and freedom. . . . The method of the monsters is to remain in the background as organizations and quietly direct their enormous power. You will seldom, if ever, find as president of N.A.M., for example, any official of a monster company. Instead, a man is carefully picked from one of the smaller companies. But he must be one who is duly impressed by power, consciously or unconsciously, one who is anxious for the approval of and recognition by the "big boys." Using the smaller companies for fronting purposes in this way, the monsters then adopt the pronoun "We." . . .

17. There is before me a copy of a current printed report of one of our monster corporations. The president of the company states, "Our goal will be to base our prices on the best interests of our consumers and our stockholders." The same statement might be made by your grocer who is also in business. There is no mention made of the public. Yet this huge corporation is for all practical purposes a huge economic state. . . . Nevertheless the public is excluded from its considerations. It will take action by the public and our Federal Government to require this and other huge economic states to properly regard the public interest. . . .

18. Through the medium of tremendous advertising appropriations a part of the public has been "sold" on the notion that monster companies may be economically justified by the beneficial research work they do and that this work enables them to produce superior products. In the field of electrical home appliances, where I can speak from the fullness of long experience, I assert unequivocally that the monster companies do not by any means produce the best products. I also believe this to be true of other industries. . . .

19. If more and more of our creative scientists gravitate to a score or more of privately owned research laboratories, then the scientific future may be secure in the hands of a few favored interests. It means greater, not less, concentration of wealth and power. . . . Envision, if you will, a society in which industry is physically and financially decentralized with preferably community-owned factories devoted to a single product line, to which the services and results of publicly-owned research laboratories are available and you will have something nearer the ideal. . . .

20. It is later than we think but it will never be too late for free men of spirit and purpose to oppose the tyrannies of oppression and slavery, political and economic. . . . We should begin by recognizing the simple, obvious truth that it is ut-

terly senseless for men or small organizations of them to try to compete with monsters. Either the monsters must be caged and restrained or they will continue to force the liquidation of our independence and to kill off smaller competitors. They are doing so right now, every day. . . . If . . . we believe in capitalistic democracy, freedom, and opportunity, we must act to prevent the monster's power of dollars and inhumanity from taking over everything we have that makes life worth living.[12]

Quinn would have the Federal government regulate monster corporations through compulsory Federal chartering, which subjects them to detailed government regulation and control. These restrictions would affect officers and directors, employees, stockholders, suppliers, and customers. The powers would include price control, profit control, purchasing-policy control, advertising-policy control, and marketing-policy control. The alternative that Mr. Quinn would expect "monster corporations" to follow to escape this control would be that of "unmerging into separate, independent units, distributing the stock among its owners proportionately as the Securities Exchange Commission or the Federal Trade Commission may approve." [13]

Quinn concludes his call to action as follows:

> The future is in our own hands. We are not obliged supinely and stupidly to accept man-made monsters as though they were divinely created. A critical decision must be made. On the one hand, there is democracy and freedom; on the other, serfdom and slavery. Between the politburo and economic monster control, there is little genuine difference; but between monsters under public control and monsters running rampant, there is the difference between an entertaining circus and a death-dealing stampede.[14]

2. The Guiding Light of G.E.: Owen D. Young, Business Statesman[15]

Owen D. Young, (1874–), is brought forth again as "Exhibit A" in light of T. K. Quinn's powerfully-worded assault upon G.E. management of the 1920's and 1930's as characterizing the essence of all things evil in so-called "monster" business. The individuals who go unnamed in Quinn's monograph are necessarily to be identified as Owen D. Young and Gerard Swope, chairman of the board and president of G.E., respectively, from 1922 to 1940. (See chapter 6.) Let us, therefore, probe more deeply into the career and philosophy of Young. Far more than the story of Edward Filene, who was merely tolerated by other businessmen, Young's case constitutes a fair test of the Veblen-Quinn position. Young was, in many respects, the accepted spokesman for American business during the two decades between World Wars I and II.

In 1894, when G.E. was a 2-year-old corporation representing an investment of just $25 million by founder Charles A. Coffin, Directors J. P. Morgan, Thomas A. Edison, and others, 20-year-old Owen D. Young was graduated from St. Lawrence University in Canton, New York. The Harvard Law School was Young's next objective, just as Harvard College had been Edward Filene's educational goal.

The Harvard admissions officers did not believe that Owen could do justice to his studies there, for he would be compelled to work his way through law school, so he entered Boston University Law School as a second alternative. Owen graduated *cum laude,* despite the fact that he supported himself and, in addition, crowded the 3-year course into two intensive years.

For the next 16 years, Young practiced law in Boston in association with lawyer Charles H. Tyler. During the first seven years of this period, he taught law at Boston University on a part-time basis. He reluctantly abandoned a contemplated teaching career under pressures generated by the need to support his steadily growing family.

Over a half-dozen year span, after becoming a full partner in the firm of Tyler and Young, Young frequently opposed G.E. lawyers while

[12] See *Ibid.,* pages 9–34, for points 1–20.
[13] *Ibid.,* page 36.
[14] *Ibid.*
[15] See *Fortune,* Volume III, Numbers 1–3, January-March, 1931, (Copyright by Time, Inc.) for basic facts in the "Life of Owen D. Young."

serving the interests of one of his own clients, the Stone and Webster utility-holding company. Upon the death of Hinsdill Parsons, G.E. general counsel, in an automobile accident in 1912, Young, to his own complete surprise, was offered a post as vice president and general counsel of G.E. by President Charles A. Coffin.

After considerable reflection, Young accepted the offer, acting in the conviction that "the legal mind, with its aptitude for the exploration of the subtlest relationships and obligations, was peculiarly adapted for the prosecution of modern business on a huge scale."[16] When Mr. Coffin offered Owen Young a vice presidential salary, Mr. Young demurred, insisting that he be paid less than the other vice presidents. He wished to be "underpaid" on the G.E. wage scale until such time as he should have demonstrated his value to his own satisfaction and to that of his employers.[17]

The General Electric Company that Owen D. Young joined in 1913 was considerably more dominant in the electrical industry of the United States than it was two decades later, when T. K. Quinn saw "confirmed" his worst fears in the Berle and Means publication, *The Modern Corporation and Private Property.* G.E.'s greatest competitor, Westinghouse, had just come out of receivership in 1909 after being caught in the financial crisis of 1907–08. G.E. itself had continued to pay normal dividends throughout this depression period. Its assets had risen over 5-fold from $25 million in 1894 to $144 million in 1913. At that time the firm had 12,000 stockholders, none of whom owned more than 1 per cent of the stock.

G.E., at this time, manufactured about one-fourth of the total electrical apparatus made in the U. S. The expanding research laboratories of the company were already paying dividends in the form of notable new inventions by Whitney, Coolidge, Langmuir, Moore, and Alexanderson of G.E.'s scientific staff. This G.E. organization was "big enough to swallow almost any man." It was, on the other hand, "an organization to challenge the individuality, the self-assertiveness of an exceptional man," such as Owen Young.[18]

Between 1913, when Young joined G.E., and 1932 when Quinn awakened to its "monster" nature, G.E. developed along a number of highly important lines, which were chronicled as follows by Young's biographer in a series of *Fortune* articles:

> In 1913, for example, G. E. was already a great manufacturer, but a rudimentary retailer; in 1931, the G. E. monogram is a familiar and friendly signature to millions of households. In 1913, the 65,000 employees of G. E. made up a host much like any other labor group, subject to strikes and the common mass disaffections of the day; in 1931, G. E.'s 100,000 employees are a closely-welded body of men and women, drawn by clear design into the essential framework of the company. In 1913, again, G. E. was beginning to analyze its foreign markets, but still looked ahead with some provincial misgivings; in 1931, the subsidiary, International General Electric . . . itself controls nineteen subsidiary companies which energetically push the sales of branded G. E. goods and act as conductors of scientific thought along the mind-ways of the world. . . . We have only commenced. Between 1913 and 1931, the Company clinched its attitude toward the problems of governmental investigation and of public regard. It specifically decided that it could not afford to earn the profits which might come from holdings in public utility companies. . . . Net income mounted from about $13 million (1913) to about $70 million (1929); the roll of stockholders from 10,500 to approximately 90,000. Six plants . . . propagated offspring in eighteen other cities. . . . G. E.'s progress could be divided, roughly, into two phases: the one leading to a profitable industrial efficiency; the other contributing steadily to a workable industrial philosophy. Of the first achievement, the most apparent sign is the general recognition of G. E. common stock, at whatever price, as a blue chip issue. But of the second achievement, the most indisputable sign lies in the certainty and serenity of the convictions which today animate Owen D. Young.[19]

Fortune pointed out that, whereas most men would regard the position of general counsel as a defensive assignment, Young's conception of his position attempted to make his litigations not only a defense, but the source of new and profitable activity. For instance, when G.E. lost a suit for patent infringement brought by the Hoskins Company of Detroit, Mr. Young paid

[16] *Fortune,* Volume III, No. 1, January 1931. (Copyright by Time, Inc.) "Life of Owen D. Young, page 98.

[17] *Ibid.,* page 98.

[18] *Ibid.,* pages 98–101.

[19] *Fortune,* Volume III, No. 2, February 1931, (Copyright by Time, Inc.). "Life of Owen D. Young," page 39.

damages with good grace. He then persuaded G.E. management to buy an interest in the Hoskins patent for heating wire, which had been contested. He then merged the G.E. heating devices department with the Hughes and Hot Point companies of Chicago, forming the Edison Electric Appliances Company.

In place of a "ramshackle department," G.E. by these moves acquired a powerful, independently managed subsidiary, which could devote its whole energies not only to the manufacture, but to the sale, of heat. The importance of this type of constructive act showed up more clearly with each passing year as G.E. built up its consumer-products lines to a point at which they accounted for fully half of all G.E. business.[20]

The great demands placed upon G.E. by World War I production needs led Young to advance beyond his lawyer-vice president role by assuming important executive duties of a "line" nature. He aided in expediting the construction of new plants, in the obtaining of government loans, in the settling of labor disputes, and in the improvement of organization structure under changed circumstances.

Young continued to exercise rare executive leadership traits, postwar, notably in the creation of the Radio Corporation of America in 1919. (See chapter 4.) Following this achievement, he was widely accepted as the logical successor to founder Charles A. Coffin upon his eventual retirement. When the pioneer team of Coffin and Rice did retire in 1922, it was succeeded by the new top management team of Young and Swope, as we have noted earlier.

Young's biographer in 1931 gave major stress to the role that labor played in Mr. Young's conception of cooperative business endeavor, as follows:

> When Mr. Young first became chairman, he declared: "We have hundreds of specialists who deal with the products; I will undertake to deal with the men." His concern arose from at least three fundamental perceptions. The first was his understanding of labor's psychology, and the desperate need of most men for security. The second was a profound moral respect for labor's equities and management's responsibility to realize those equities. And the third, most far-reaching of all, embraced his entire conception of the integration of industry, with labor as one great stone in the triumphal arch. . . .
>
> In 1920, Mr. Young had conceived that a profit-sharing plan whereby employees should hold stock in the Company would be advantageous both to the Company and to its personnel. . . . As a result of the renewed efforts of the Young-Swope regime, the G. E. workman today may subscribe to bonds of G. E. Employees' Securities Corporation on long-term payments (some 40 per cent of the personnel own bonds roughly totaling $40,000,000). These bonds pay 6 per cent with an added 2 per cent so long as the employee retains the bonds and remains with the Company. Also, after a year's service, the employee obtains $500 life insurance from the Company without charge (it reaches $1500 after five years), and may get more at inconsequential premiums. . . . The worker may provide for a liberal pension by the annual payment of 1½ per cent of his wages . . . and the Company contributes to the pension fund. After five years, a worker receives a semiannual service bonus. . . . During the present depression, Mr. Swope has instituted an unemployment insurance plan. . . . The Young-Swope campaign . . . has been far more rational than emotional and has amply justified itself economically in the Company's improved relations with its men. The Lynn strike of 1918, as we have already indicated, was the last major labor disturbance to affect General Electric.[21]

The *Fortune* biographer also pointed out in 1931 that Mr. Young and Mr. Swope are men who believe that "enlightened business ethics alone can build up a company into a permanently profitable institution." As an indication of G.E. management's extreme sensitivity to public opinion, he cited G.E.'s distribution of Electric Bond and Share securities, valued on the New York Curb Exchange at $117,000,000, to its shareholders, rather than subject itself to criticism of the close relationship of a great manufacturer and a large group of its utility customers serving a population of over 20,000,000 persons. Mr. Young's attitude toward public relations is further illustrated by the following story, which he recounted to a group of G.E. employees:

> Everyone has bad mornings, hates to hear the telephone ring, or to see the office door open. I beg of you, gentlemen, when next you meet such a morning, take a stick of dynamite and blow up one of our plants. But do not take it out on a customer

[20] *Ibid.*, page 40.
[21] *Ibid.*, pages 110–114.

of the General Electric. We can replace the plant you have destroyed; we know its value; we have a reserve from which we can rebuild. But we cannot measure the good will you have destroyed, and we can never know if we have replaced it.[22]

Under the Young-Swope regime, G.E. took steps to alter the previously existing public concept of it as "a remote and incredibly large corporation" by entering the home through sale of small electrical appliances. In this manner the company developed a real appeal to "the housewife and her husband."

In a real sense Owen D. Young regarded his position with G.E. as a "public trust." Young's *Fortune* biographer brought out the sense of public service in Mr. Young's motivation as follows:

Undoubtedly he is aware of his powers. Undoubtedly he enjoys the grand scale transactions of big business for their own sake and for the conviction of influence which he obtains from them. But if you omit the consideration that he feels a profound responsibility to use that influence for the public welfare, you miss what, to his friends, seems the essential of Mr. Young's character, the element which has carried him with such honor through a crowded public life. His judgments on business are shot through with this motive. . . .

The head of one of our greatest industrial concerns, Mr. Young would undoubtedly call himself a liberal. As a liberal, however, he does not repudiate the established order in favor of an ideal; he strives, on the other hand, to approach an ideal with the worthy elements of the existing machinery. In his comments on the capitalistic system, he reveals his sense of proportion. Says he: "After all, capitalism is only a vehicle by which civilization has gotten this far along the road. It is not an end in itself. It has served mankind well, and necessarily we must be 'from Missouri' until something better is demonstrated. . . . I can indict the capitalistic system as well as the Bolshevist. I know its failures as well as he. . . . It does not mean that I am bent on destroying an established machine. . . . It means that I am willing to direct my attention to the improvement of that existing machine . . . I venture the notion that we can make greater progress by improving what we have than by starting again. . . . The defects of capitalism are a challenge to youth, especially in America, to cure them, and I look forward to an economic and social advance . . . comparable to the developments in mechanics and applied science. . . ."[23]

Economic integration of the world is Mr. Young's ideal. Toward it, his experts' committee made one definite, notable contribution—the Bank for International Settlements. "That institution," he says, "is unlike anything which has existed in the world before. . . . The International Bank may turn out to be an essential and useful piece of machinery for an economic world which of necessity is becoming more and more closely integrated. . . . The League represents international political cooperation, and the bank international financial cooperation. . . ."

Thus Mr. Young might be called the Wilson of an unrealized economic league of nations. And like the late President, whose virtues he greatly admired, he is accused in many quarters of lofty and vacuous generalities, meaningless idealism, stupidity, even hypocrisy. The insistent demand of the skeptics who distrust a theorist on sight is that the theorist present his suggestions in concrete, definite terms. And terms of that sort Mr. Young has repeatedly offered, in his development of the A.E.F.G. (radio) Consortium and of International General Electric Company, in his work for the Dawes and Young Committees, and the Bank for International Settlements. Assuredly, he is no opinionated tyro, but possibly the most widely experienced man alive today in the matter of detailed, difficult international business. If the skeptic still protests, he may study a powerful organization close at hand which testifies to Mr. Young's ability to make the stuff of action out of the thread of theory. The theories of cooperative enterprise which so successfully govern its progress are similar to those which Mr. Young would wish to have applied in the economic world at large. It is the most compelling single argument which Mr. Young can present for the efficacy of those theories. It is, obviously, General Electric.[24]

Owen D. Young has offered the following statement concerning his concept of his chairmanship as "the trusteeship of a great public interest":

I think the new idea [of management] sprang largely from the fact that lawyers were advanced to high management positions. This was initially done because our laws became so complex that for a time it was difficult for anyone except a lawyer to run a big business and keep within the law. While that was the reason for the lawyer coming into these positions, the result was quite different from that anticipated. If there is one thing a law-

[22] *Ibid.*, page 114.

[23] *Fortune*, Volume III, No. 3, March 1931. (Copyright by Time, Inc.) "Life of Owen D. Young," pages 90–91.

[24] *Ibid.*, page 94.

yer is taught, it is knowledge of trusteeship and the sacredness of that position. Very soon we saw rising a notion that managers were no longer attorneys for stockholders; they were becoming trustees of an institution. Now that is a great change. . . . It makes a great difference in my attitude toward my job as an executive officer of the General Electric Company whether I am a trustee of an institution or an attorney for the investor.[25]

The *Fortune* biographer has spelled out the board chairman's execution of this trusteeship policy in the following terms:

On this basis Mr. Young has determined the beneficiaries of his trust. As he conceives it, they fall into three classes—the 100,000 persons who work for G. E., the 100,000 persons who own G. E. stock, and the general public, including G. E. customers. It is Mr. Young's vigorous purpose to guard the interests of all of them. For their protection, he wants G. E.'s credit to be so good, its reserves so strong, and its inner and outer relationships so healthy that it can obtain capital "at the lowest rate even under the worst conditions." Secondly, he wants the institution of G. E. to be so attractive to workmen that the best men will always be obtainable and anxious to come. Thirdly, he wants G. E. products to be so excellent, and their prices so reasonable, that the public will prefer G. E. products and thus take them in difficult as well as in prosperous times. In other words, as Mr. Young expresses it, he wants options on capital, labor, and the market. By the maximum satisfaction of all his beneficiaries, he will obtain these options. And, retroactively, the options will assure the continuing satisfaction of laborers, stockholders, and the public.

Thus the best interests of the entire corporate fabric are served by protecting each of its members. This is not a startling conviction, yet one which big business has taken a long time to learn. Business history is full of organizations which have systematically tried to bilk either laborers, stockholders, or consumers. There is another reason why Mr. Young has no such desire. He believes that big business responsibility tends to produce scrupulous care in those who undertake it. Nor is this idea new. Mr. Young has himself quoted the remarks of Ralph Waldo Emerson: "The habit of directing large affairs generates a nobility of thought in every mind of average ability. For affairs themselves show the way in which they should be handled and a good head soon grows wise and does not govern too much."

. . . The reflection that his convictions must grow more general, less specific, as their field of application widens will never silence him. It is one mark of greatness to be unable to disassociate your own affairs from those of the world at large, to perceive an interrelation everywhere. Mr. Young cannot separate the business of G. E. or of any single enterprise from that of the world, for him the one leads inevitably to the other. His real business, his most absorbing interest, is the world's business. And to the question of the whole, rather than the part, Owen D. Young will always devote his strength.[26]

[25] *Ibid.*

[26] *Ibid.*, page 94.

QUESTIONS

QUESTION NO.	PAGE REFERENCE	QUESTION
1	477–481	Acting as Quinn's "political advisor," draw up a succinct political platform that would effectively implement the economic philosophy of T. K. Quinn in the event that he were elected to the presidency.
2	477–481 & 365–368	Compare and contrast the economic philosophies of T. B. Veblen and T. K. Quinn.
3	477–481	a. If "monster" corporations are inherently less effective than small, single line independents, as T. K. Quinn claims, why is it that Quinn fears for the survival of small companies that are in competition with these large corporations? b. Evaluate Quinn's position with respect to this issue.
4	479	In your opinion, is the practice whereby companies "hire groups of young college graduates and give them training for the better jobs that, under existing conditions, cannot be filled from the ranks" an "undemocratic" practice, the effect of which is "to establish fixed groups or classes like the old feudalistic system which is a far cry from the democracy of which we boast or the free enterprise we advertise"? Explain.
5	479	Evaluate T. K. Quinn's handling of his assignment to approach Walter Reuther with an offer to become employee-relations manager for a "monster" company from the point of view of a) Quinn's superior officer who issued the directive, b) Walter Reuther, c) the public interest.
6	480	Do you agree unequivocally with Quinn's statement that "any factory in which the management does not know by name and record every worker in the plant is too big and undemocratic"? What conflicting values should be weighed in determining optimum plant size? Apply Quinn's "rule of thumb" to a) a steel mill, b) an automobile assembly plant, c) the Pentagon Office Building of the military establishment, and d) a large metropolitan university.
7	480	In your opinion, can the United States become the "great continental, technological society" envisaged by Professor Charles Beard and still retain what is essentially a "democratic" and "capitalistic" way of life? Explain.
8	480	Might a "monster" corporation, which sincerely endeavored to "base our prices on the best interests of our consumers and our stockholders," thereby develop a pricing policy that would foster "the public interest," rather than "exclude the public from its considerations"? Explain.
9	481–485	Acting as Young's "political advisor," draw up a succinct political platform that would effectively implement the economic philosophy of Owen D. Young in the event that he were elected to the presidency.
10	477–485	Compare and contrast the economic philosophies of T. K. Quinn and O. D. Young.

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