HOW TO WRITE TECHNICAL BOOKS

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HOW TO WRITE TECHNICAL BOOKS

with some pertinent remarks
about planning technical papers
and forms

by

JOHN GLOAG

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ILLUSTRATIONS IN THE TEXT

My thanks are due to Harry Jones for allowing me to include in Chapter X his typographical suggestions for revising various government forms. These suggestions and some paragraphs of Chapter X were published in the *Strand Magazine* in February 1947, under the title of "The Reform of Forms." I must also thank Lionel Allston for his sketches of the publisher, the two sorts of authors and the normal type; also for the four renderings of the country scene.

I am grateful also to Major Oliver Stewart, and to the Editor of the *New English Review*, for allowing me to quote from the article, "Putting it Briefly," which appeared in that journal in January 1948; and to Dr. Arthur Lilker, and the publishers of *The Medical Bookman and Historian*, for allowing me to quote his letter, entitled "Heartache," published in March 1948. For supplying the specimens of typewriter type on pages 7 and 8, I am indebted to the Imperial Typewriter Co. Ltd. of Leicester. For her help in planning and preparing the material for this book and for making the index, I must thank Miss Dora Ware.

John Gloag
May 1948

CHAPTER I

THEY DON'T WANT TO READ IT

IT is the purpose of this book to examine how technical information may be written and presented so that it is easy to read and understand, and how forms might be improved both in language and lay-out. Having read millions of words about technical subjects in books, pamphlets, papers delivered to learned and professional societies, documents, official and unofficial, during the last thirty-five years or so, I know how much time I could have saved if the information that I was trying to acquire had been presented simply and intelligibly.

Technical information need not be conveyed in a dull way, nor should the study of it impose a strain upon the faculties of the reader, nor should the filling up of a form demand the initial effort of conquering an innate repulsion. Technical books and documents, whether they are printed, typewritten or reproduced by some mechanical duplicating process, are usually labelled as "bumph"—a word of indelicate derivation, but now universally accepted as describing something that is tedious, complex and long-winded. Such material is nearly always tedious, complex and long-winded because it has not been properly planned.

There is much enthusiatic talk about planning in the middle years of this century, but there are few forms of training which fit people for the task. Only architects

are taught the basic principles of planning: most other people discover them accidentally. No architect would dream of attempting to erect a building without knowing the exact relationship of its different parts; he would never commit to brick or stone, or steel and concrete, a haphazard conglomeration of functions, for even if such an unplanned structure could stand up, it would be costly to build, wasteful in use, and probably hideous in appearance. As the architect, before he plans his work, knows what the function of a building is, how it will be used and by whom; so must an author with technical information to impart, know what he wants that information to achieve and to what type of reader it is directed. He must be as clear about the objectives of his work as an architect is about his objectives.

Authorship is now thrust upon many people who have no strong desire to write, no burning creative urge to express their thoughts, opinions or powers of invention. Lacking the nourishment which enthusiasm or imagination can give, their writing is unlikely to be either robust or vivid; but it could always be clear. The practice of authorship by people without a vocation for writing is increasing, because this is an age burdened by an ever-enlarging mass of technical information. Reports and memoranda, flowing from thousands of offices, record the deliberations and findings of hundreds of committees; text books multiply: forms proliferate. Thousands of necessary and millions of unnecessary words are written, typed and printed every year, all over the world, demanding from conscientious or compulsory readers, the sacrifice of precious hours. The technician is becoming an increasingly significant

figure, and it is essential that he should be an intelligible technician, if he is to avoid arousing the suspicion that he wants to build a wall of technicalities to separate him from laymen.

Technicians tend to use an obscure language of their own. Latin used to be the language of learning; it still furnishes the basic terminology for many branches of science, notably medicine and botany; its use may once have sustained the pride of many a struggling scholar, who felt that by his mastery of Latin he was differentiated from the layman, and the limitations of his knowledge happily concealed. A learned language may be abused in this way; so can the use of technical terms. Technicians disclose an unfortunate tendency to use cumbersome technicalities instead of plain English, and to employ far too many ill-chosen words to describe or explain some process or act which simple language would reveal as ordinary common sense. This revelation would not diminish the authority of a technician: it would increase general understanding and respect for his work. Nearly every subject that seems dull or obscure or needlessly complicated, acquires those apparent defects because the exposition of it has not been clearly thought out, and this lack of mental clarity on the part of the person who is trying to inform and explain is reflected in the words that he subsequently uses.

Hilaire Belloc, in an after-dinner speech which I heard him make many years ago, gave an excellent formula for addressing an audience; one that is equally applicable to writing an article, a report, or a technical book. A speech, he said, should be divided into three

parts. You should tell your audience that you are going to tell them something; then tell them; then tell them you've told them. This book is concerned with the planning, writing, presentation and publication of technical books. The penultimate chapter deals with the planning, writing and presentation of technical and semi-technical documents, reports and memoranda; the last suggests how the language and presentation of forms might be improved.

I have already adopted the first part of the Belloc formula in this opening chapter. I have told you what I am going to tell you, and in the next chapter I shall begin telling you in detail. It helps the reader if you amplify the list of contents which precedes the introductory chapter of a book, by explaining in that chapter what the book is about, and how you, as an author, are approaching your subject. The body of the book, the chapters between the first and last, should give the information you want to convey as clearly and concisely as possible, while the final chapter should tie up any loose ends, and by summarising the conclusions you have drawn, make it easy for readers to grasp their significance. You may thus help them to reach a conclusion which they can remember. Even though they may not agree with you, they are left with a tangible idea in their minds about the subject of the book, and some grasp of the information that you have attempted to convey. In other words, in your last chapter, "tell them you've told them."

Any practised, or unpractised author, who is about to write a technical book or a technical document, should exercise his mind by reading a few well-planned

technical books outside his own specialised field of knowledge. One of the first published books in the English language is a model of good literary planning. It was written by Edward, the second Duke of York, between the years 1406 and 1413; it was about hunting, and was called *The Master of Game*. In the Appendix I have given a few examples of book planning on different technical subjects.

Using the Belloc formula, I have now told you *what* I am going to tell you; in the next chapter I begin telling you.

CHAPTER II

PLANNING A TECHNICAL BOOK

THE outline and detailed plan of a book correspond to the work which is finally published in much the same way that the plans, sections, elevations and working drawings prepared by an architect correspond to the building which is ultimately erected. A technical book that is authoritative and has such educational value that it becomes known and accepted as an illuminating work of reference is unlikely to achieve that reputation unless its author first makes a careful and detailed plan, so that he knows exactly what is going into his pages. It must gain in lucidity when he has finished the exacting job of planning and has experienced the mental clarity that comes to an author if he does that job thoroughly.

Before an author of a technical book begins to make even a rough outline of his plan, he should familiarise himself with the method of measuring the length of books. Length is always computed by the number of words in a book, not by the number of pages, because the amount of space occupied by printed text varies in accordance with the size of the type used and the amount of space between the lines of type. To attempt to estimate the length of a book by the number of printed pages is misleading: a book printed in accordance with the authorised economy standards which were established during the Second World War may

have, say, 200 pages; but a pre-war edition of the same book might have occupied 270 to 300 pages. The difference is caused by a smaller type being used in a larger area on each page, for lines have been lengthened at the expense of margins, and by reduced "leading," as the space between lines of text is called. The length of the average contemporary novel is somewhere between 70,000 and 90,000 words. Novels used to be much longer and were issued in two or more volumes. *Pickwick* is about 300,000 words long; *David Copperfield* runs to over 350,000, and Thackeray's *Virginians* is over 350,000.

The first of the author's problems is to estimate the number of words in the material he is preparing for publication. With typescript, the number of words may easily be calculated without counting every one, by reckoning that with double spaced typing on quarto sheets of paper and a left-hand margin of about two inches, each page will take approximately 250 words—four pages to 1,000 words. That applies if the typewriter type on the machine is like this:

Typewriter type varies in size, but there are three types in general use. This is known as Elite, and gives you approximately 1,000 words to every four pages, if the work is double-spaced, like this paragraph.

The following are specimens of the two other typewriter types in general use:

This type, which is known as Pica, being larger than the previous example, occupies more space. It is fairly safe to reckon five pages to 1,000 words, when this size is used for your typescript.

Here is another variation, slightly larger and known as Large Roman. There is not much difference between this and Pica, and again you may reckon five pages to 1,000 words.

The mechanical aspects of book production occupy a later chapter: but before a plan is made, understanding of book measurement is essential.

The first step in planning a book is to make an outline, which is like a sketch plan. This outline should be a short, concise survey, 200 to 500 words in length, of the

ground that the author wants to cover, though the extent of such an outline would vary with the nature of the book. It should contain the following information:

(1) The objectives, that is to say, the type of reader to whom the book is primarily addressed.
(2) The title, or a tentative suggestion for the title.
(3) The nature and range of the information to be included.
(4) The approximate length of the book.
(5) The division of the book into sections, if necessary, and into sub-divisions of those sections, or into the generally accepted method of chapters.
(6) The number and kind of illustrations and diagrams.

This outline is the author's first task: without it, he may become involved with a large and unmanageable mass of work, and may collect far too much material, or even the wrong kind. This may misdirect his efforts, particularly if it happens to be interesting material. There are always tempting by-ways along which an author may stray, only to find that he must retrace his steps, having spent a lot of energy in the pursuit of an idea which he has never effectually overtaken. An outline enables an author to exercise ruthless powers of discrimination, encourages him to reject all irrelevant matters, and nerves him for the task of "slaughtering his darlings," whether they happen to be ideas, or combinations of words which tickle his fancy, or favourite words that sound all right but really get in the way. The outline then is the author's first concern, and apart from its practical significance for his work, it makes life easier for a publisher. A clear outline should enable an author to discuss a book with a publisher before it is

written; an amorphous mixture of ideas and aims merely adds another headache to the large number of headaches which publishers endure every few minutes, every day.

Once the outline is settled, whether you have secured the interest of a publisher on the strength of it, or not, it may be amplified, and the book planned out into chapters. The Belloc formula, while not always applicable, is at least an excellent guide to planning, because it compels the author to think clearly about his subject. It is not always possible to avoid having an introduction, but it is a good thing, in making a book, to allow your opening remarks to occupy the first chapter. Many readers reject introductory material. They will avoid reading a preface, a foreword, or an introduction, if it is labelled as such, and plunge straight into the book at Chapter One. If your introductory remarks are of genuine importance to the book as a whole, then they should be embodied in the first chapter. The introduction to a large, technical work, if it is numbered as a section, is obviously an integral part of the book.

In making a plan for a book you are likely to clear your own mind about your subject, and then you may have to face an intimate and personal question: are you going to write an objective book, or are you going to make it a vehicle for your own particular point of view, your pet beliefs and ideas? Writing compels most people to be honest with themselves, and even the writing of a technical book may be influenced by the religious, political or economic faith of the author. If the particular brand of faith is openly acknowledged by the author, his integrity will never become suspect;

but if he sets out to be austerely objective and then falls by the wayside, and allows his faith to bias his writing or to affect his conclusions, then the critical reader will become sceptical instead of receptive. A book inspired by a definite point of view is usually more interesting than a book which is purely factual. Even a book that is concerned only with measurable facts may, by the accent which is put on some facts or the minimising or omission of others, express the writer's point of view. The suppression or manipulation of facts has become so common a practice that its immorality is apparently forgotten. The practice is inexcusable. But apart from its contents, the structure of the book and the character of its plan may indicate the personal ideas and beliefs of the author, even though he excludes all expressions of opinion from his chapters.

I have written many technical books myself, most of them for popular consumption, though a few have been directed specifically to some technical audience. To illustrate methods of planning and to suggest how a book may be written from an openly acknowledged point of view, I shall describe the planning of three of my own books. The fact that I have written books on the related subjects of architecture and industrial design and social history, and that I have learnt by making many mistakes when I first started to write both technical books and novels, is my qualification for writing the book which you are now reading. Because of this, I am drawing these examples from my own experience, and using books which I have written myself, as I know more than anybody else about the way I approached the job of writing them.

The first example, included in a series called "The Library of English Art," is entitled *English Furniture.*[1] It attempts to give a compact history of furniture-making in England from the beginning of the sixteenth century to the early nineteen thirties. Originally published in 1934, a second, revised edition was issued ten years later, and that and subsequent editions have retained the same form as the original. Hundreds of histories of furniture have been written, and when you are dealing with a history of almost anything, a plan is imposed upon you if you follow a chronological sequence. You may deal with that sequence in a simple way; you may allow your sections to be determined by centuries, by the reigns of kings, or by well-marked changes in the social or economic structure of a country. Such easily recognisable periods and phases provide convenient divisions for planning a book. But in my book on *English Furniture* I wanted to scrutinise the history of furniture-making from the point of view of *design*; to make my readers conscious of the fundamental significance of design, so that they could appreciate how it was influenced for good or ill in different periods. I hoped thereby to diminish, or at least to bring into proper perspective, the romantic appeal of age, as such, and to reduce correspondingly the potency of that dramatically misleading word "antique."

So I planned the book in ten chapters, devoting the first two to the historical background of design from 1500 to 1700, and from 1700 to 1934. The next five chapters examined the way furniture design had been directed and controlled by dominant influences in

[1] Published by A. & C. Black Ltd.

different periods. The titles of those chapters describe how this part of the plan worked out. Here they are:

III. Furniture design under the woodworkers, 1500–1660.
IV. Furniture design under fashion, 1660–1730.
V. Furniture design under the architects, 1730–1830.
VI. Furniture design under the romantic movement and the furniture trade, 1830–1900.
VII. Furniture design under the antique dealers and artist-craftsmen, 1900–1920.

Having now made my readers thoroughly conscious of the nature and importance of design, and brought them up to the third decade of the twentieth century, I gave them a chapter on new types of materials—plywood, tubular steel, rubber, plastics, and so forth—and their effect upon design. My penultimate chapter was on the buying of furniture, particularly "antique" furniture. The final chapter discussed some of the books which had been written about the subject, and the general conclusions of the whole book were condensed into the last two paragraphs of that chapter.

The book was illustrated by line drawings in the text, a frontispiece, and twenty-three plates of half-tone illustrations from photographs, the latter forming a continuous section at the end of the book, between the last chapter and the index.

The next example is a book which describes and advocates a technique of research work in industrial design. It is called *The Missing Technician in Industrial Production.*[1] The long title was necessary, for had it

[1] First published in 1944, by George Allen & Unwin Ltd.

remained as I originally intended, as *The Missing Technician*, it might have been mistaken for a thriller. It is addressed to manufacturers and all people who are interested in or concerned with the production of goods in quantity by mechanical methods. In the first and subsequent editions the same plan was followed, and the book is written with the openly avowed object of waking up industrialists about the importance of the designer, who is the "missing technician" in British industry. There are ten chapters, and the first, which is entitled "Why Missing?", compresses into a brief space the history of industrial design in Britain and poses this question: "How can the good designer and the industrialist work together productively?" The remaining nine chapters set out to answer that question. Chapter II explains industrial design as a technical operation, and Chapters III and IV describe the object, character, composition and work of design research committees. The design research committee represents the new technique of research work in industrial design which the book is intended to demonstrate and popularise. The remaining chapters cover different practical aspects of this form of research work under these titles:

V. Costs, royalties and patent rights.
VI. Selecting designers.
VII. Examples of work by design committees.
VIII. The effect of new materials on design.
IX. Old materials with new properties.
X. National character in industrial design.

There is an appendix listing the principal organisations which are concerned directly, or indirectly, with industrial design, and sixteen plates in half-tone follow

the index at the end of the book. Line drawings in the text are used.

The job of this book was frankly exhortation, supported by practical examples to show how the ideas which were advocated worked out in practice.

The third example is a history of domestic architecture in this country from Roman times to the present day, entitled *The Englishman's Castle.*[1] The opening chapter explained the plan of the book and described the influence of climate, materials, and the skill of architects and builders. Thereafter, the chapters followed a chronological sequence. Period by period they dealt with large houses and small houses, in the country and the town, so that the homes of noblemen and peasants, merchants and artisans, with their character, contents and amenities, were described, century by century. From Chapter II, which concerned Romano-British houses, to Chapter XVI, which brought the record up to the twentieth century, this plan controlled the structure and contents of each chapter.

The chapters were not mere catalogues or bleak technical descriptions of building methods and materials and furniture; those basic subjects were related to the varied strata of social life in each period. The periods themselves generally corresponded to a dynasty, occasionally to a revolution in social conditions and sometimes to industrial and architectural conditions. The chapter titles from II to XVI show this plan in operation.

[1] First published in 1944, by Eyre & Spottiswoode Ltd.

II. The house in Roman Britain (A.D. 100–400).
III. The Anglo-Saxon house (A.D. 500–1066).
IV. The Norman-English home (A.D. 1100–1250).
V. Mediaeval English homes (A.D. 1250–1450).
VI. Early Tudor houses (A.D. 1450–1558).
VII. The Elizabethan home (A.D. 1558–1603).
VIII. Early Stuart houses (A.D. 1603–1640).
IX. The Puritan home (A.D. 1640–1660).
X. The Golden Age of building begins (A.D. 1660–1680).
XI. Progress in house design (A.D. 1680–1700).
XII. Queen Anne and early Georgian homes (A.D. 1700–1750).
XIII. Late eighteenth-century houses (A.D. 1750–1800).
XIV. The Golden Age of building ends (A.D. 1800–1850).
XV. The Victorian home (A.D. 1850–1900).
XVI. The twentieth-century Englishman's Castle.

When you have made your plan, no matter how much information you have in your head, all kinds of supplementary needs in the way of information and material become apparent. As you plot out your chapters, the need for fresh reading is suggested, and the desirability of verification is underlined. It is of first importance always to seek original sources of information, if possible. It is better to delay work than to rely wholly on secondary sources. Many an error has been perpetuated through an author's reluctance to give up time and patience to checking facts, quotations and statements. Never accept without verification a quotation which some other author makes. Even the most conscientious writers can be slovenly or careless when they quote.

Obviously a note should be made of the title, author, publisher, date and edition, of all books or records which are consulted. With the possible exception of a bad index, or the omission of an index, few things are so maddening in a technical book as citations from authorities, which the author uses to support or to illustrate his statements, without reference to the source from which they are drawn. Even more exasperating is the inadequate reference, or, worse, the obscure hint, such as: "Quoted from *Evelyn's Diary*," without any clue to the date of the entry. The first time a work is quoted or referred to, a footnote or a numbered reference should give the title, the author, the publisher, the date of the edition, the number of the chapter or section, and the number of the relevant page or pages. Subsequent references to the work should only include title and author, chapter and page numbers; it is unnecessary to keep on repeating the facts about the publisher and the edition. All this seems elementary and obvious; but these elementary and obvious matters are frequently ignored by writers of technical books, and I shall discuss them in greater detail in Chapter V. Meanwhile, much energy may be conserved by tracking down the original sources of anything you want to refer to or quote, so that you may be assured of its authenticity and accuracy. If you want to quote more than a few sentences, say anything in excess of 300 to 400 words, from the work of a living author or from one whose copyright has not expired, although he may have been dead for several years, it is advisable, as well as courteous, to write to the author or his executors, asking permission and making it clear

how much you want to quote and in what context. Unless an author parts with his copyright to a publisher—a most inadvisable proceeding—it remains his property during his lifetime and for fifty years after his death, according to the provisions of the British Copyright Act of 1911.[1]

The preparation of a plan should not only simplify the work of assembling your information and checking references, but it should also give you a comprehensive idea of the material you need for illustrations. It is a bad practice to write your book first, and then think about how it is to be illustrated. The collection of illustrations should be started immediately the plan for the text has been made. Diagrams, drawings and photographs are often necessary, for they can save writing and reading. A three-word remark, frequently made by film directors to script writers is: "Don't tell —*show*!" To reject short cuts to the minds of the people you want to reach is sheer obscurantism: don't use words if diagrams or pictures could do a better job.

You may prefer to make or commission your own diagrams or drawings or to take your own photographs. (If you commission an artist or a photographer, it must be understood that he gives you and your publishers the *exclusive* use of any work he does specially for your book. Get this agreed in writing.) Whether you do this or draw your material for illustration from existing sources, it saves time to classify your needs by making a plan for the illustrations which corresponds to the plan you have made for the text. If you are

[1] Sir Stanley Unwin, in *The Truth About Publishing*, deals exhaustively with questions of copyright.

collecting illustrations from existing sources, remember that publishers must have original photographs, preferably black and white glossy prints; that they can't make good blocks from cuttings from books, magazines or newspapers, and that the ownership of copyright must be settled with each illustration. No publisher should ever be given any material for illustration, unless the author has written permission from the owner of the copyright. The owner may be a person, or a firm, a publishing house, a newspaper, a magazine, or a professional body. Permission may be granted either upon payment of a fee or in return for a printed acknowledgment in the caption of the illustration or elsewhere in the book. When writing for permission to reproduce material for illustration, ask for prints of photographs and copygraphs of drawings to be supplied in duplicate if it is possible.

The arrangement of all this material and its presentation to the publisher are discussed in Chapter V; but the initial procedure for collecting illustrations has been included here, because it is necessary for all such mechanical jobs to be organised and started before you begin writing the book. As you write, additional suggestions for illustrations are likely to occur to you, and it is much easier to fit them in and to assess their merits as suggestions if you have already made a plan for the illustrations.

You may have gathered from this chapter that writing a technical book involves a lot of mechanical routine work, which can be tedious and exasperating, though it is at least manageable if properly organised. There is more to come, as Chapter V will disclose.

But having made your plan, both for the writing and illustrating of your book, you have cleared away at the start the bulk of the mechanical detail. You can now get on with the next job, which is writing the book.

Question.—What procedure, advocated in this chapter, has been deliberately omitted?

Answer.—Sir Stanley Unwin's book, *The Truth About Publishing*, is referred to in a footnote on page 18. The publisher, date of edition, chapter and page numbers were omitted. It is published by George Allen & Unwin Ltd., 5th edition, 1947. The reference is to Chapter IX, pp. 263–89.

CHAPTER III

SAY WHAT YOU MEAN

SOME people start to write with the hope that ideas will come to them from the mere act of setting down words. Well, ideas may come that way; but if they do, don't let the words which have coaxed them from the recesses of your mind remain as your opening paragraph. The opening paragraph of almost anything can usually be cut. Even with practised writers, it is "the getting up steam" paragraph. When I began to write this book, I found on re-reading the first draft, that I had fumbled for six sentences before getting down to business in the first chapter.

I cut that first paragraph.

Just to show how easy it is to drop into the habit of "getting up steam," here is the discarded paragraph, with all its laboured, explanatory detail. Pure lumber. Compare it with the opening of the first chapter as it now stands.

" 'Have I got to wade through all this?' How often is that despairing query evoked by the prospect of having to read a technical book, a memorandum or a report on a technical subject, or indeed, any document that is duplicated or typewritten, or any form which has to be studied and completed? At the outset, you are repelled, not only by the language of the book, memorandum, or form, but by its appearance, by the manner in which the information, or the request for

information is presented to you. No matter how anxious you may be to absorb or provide the information, your interest is deflated even before you begin to read. The book or document looks dull; the form appears to be intimidating. In all probability the book or document *is* dull, and you'll find it an effort to read and an agony to remember; while the form may be incomprehensible or capable of being interpreted in a multiplicity of different ways, and it is so meanly conceived in the spurious interests of paper economy, that in the process of completing it, you spoil at least one, and perhaps two or three."

Not one of those six sentences reveals the purpose of the book. Nobody is immune from falling into such traps; and a good rule in writing is: *When in doubt, CUT.*

A salutary thought, which should constantly recur to writers, is that people don't want to read what you write, particularly if you are writing about a technical subject. Technical books, though instructive rather than entertaining, need never be uninteresting. If your book is uninteresting, you are increasing the resistance of your readers, and wasting their time.

As you have made a plan for the book, and know broadly, chapter by chapter, what you are going to say, the task of writing is simplified. Nothing can make that task easy, except the complacent confidence of inexperience; but its formidableness is diminished because you have arranged your material and are consequently liberated from the drudgery of sorting it out and assimilating it as you proceed with the writing. It is all there, tidily classified according to your plan, with your references, the relevant books, documents,

statistics, and other factual information; so with your material organised, you can consider ideas for interesting readers in what you have to say. Only imagination can supply you with ideas, and only God can supply you with imagination. If you haven't got one, then be clear, and if you are clear you are unlikely to be tedious even though you may be unexciting.

Many things can get between the author and reader. Some of them are mechanical and will be dealt with under "presentation" in Chapter V: some arise from unsuspected indolence. Most of us are lazy; few of us admit it, and many of us go on doing lazy things all our lives unconsciously. One of the laziest things an author can do, is to use clichés and ready-made phrases. There are some occasions when the use of clichés may be effective; but it is a good rule to avoid them. When I first started to teach myself how to write, I was spared years of wasted time as a result of reading a book by Arnold Bennett called *How to Become an Author*.[1] That book, long out of print, had for its main subject the writing of fiction; and Arnold Bennett opened my eyes to a basic rule for writing, which is to compose with words and not in phrases. H. G. Wells, in his novel, *Marriage*, speaks of "the poetic gift, the gift of the creative and illuminating phrase which alone justifies writing. . . ."[2] If you acquire through study and hard work a feeling for the sound and character of words, you are still far from enjoying an easy mastery of them,

[1] *How to Become an Author*, by Arnold Bennett (London: C. Arthur Pearson Ltd. First published 1903.)

[2] *Marriage*, by H. G. Wells (Macmillan & Co. Ltd. 1912); Book III, Chapter II, p. 423.

but in time you may find yourself creating phrases which are easy and interesting to read. Directly you start using words for their own sake, you may also find that you have been writing pages of stuff which sounds well, and has indeed an almost musical ring about it, but it doesn't mean anything.

For technical books, clarity is the first need. Jargon is the great enemy. If I were using contemporary jargon instead of saying that "clarity is the first need," I might have said "an easily comprehensible statement is a top priority."

Perhaps the worst ingredient of jargon is the spurious technicality. Here is a typical example. A doctor giving evidence at the Old Bailey said: "I found on his face an eliptical abrasion——." Asked by Counsel to use plain English, he said: "A curved scratch." (Reported in the *Evening Standard*, January 14, 1948.) Technical jargon is something to guard against, particularly as it besets our eyes everywhere today, and is dinned into our ears in radio talks and public speeches.

The jargon of one branch of science imported into and mixed with another makes confusion worse confounded—and that particular cliché justly describes what happens when the vocabulary of the psychiatrist is appropriated by the economist, or that of the sociologist by the architect. We live in a world that is half fuddled with pseudo-scientific terms, which are used with intemperate fluency by speakers and writers who have no pretensions to a scientific education, and whose use of such junk indicates their incapacity for critical discrimination. If a politician or a political publicist or writer makes almost any statement today, his meaning

has to be disentangled from a jungle of technicalities and sentimental extravagances. For instance, if he wants to refer to the continuity of human progress, he may make this sort of pronouncement:

"From this inspiring saga there emerges one dominating and inescapable conclusion, buttressed by the sanctions of history, which is that Man, uninhibited by environment, is inevitably progressive. His capacity for integrating his basic functional needs with the availability of materials and the consequent evolutionary processes of industrial technique is apparent at every step he has made on the long road which has led to the economic and cultural standards he now enjoys."

At a still lower level, slightly below that of the nursery school, is the version which one so-called statesman employed some years ago when words as well as thoughts failed him, and he condensed his meaning into the monosyllabic recitative: "On and on and on, up and up and up."

The genuine scientist would never employ tumid phrases or half-baked simplifications. Towards the end of his great book, *Ancient Hunters*, Dr. Sollas refers to the subject of human progress in these words:

"If there is one fact in all this story that stands out more salient than the rest it is the progressive nature of the human race. This is most immediately obvious in the practical arts of life; every successive stage brings with it some improvement in methods, some new power over material."[1]

[1] *Ancient Hunters*, by W. J. Sollas (Macmillan & Co. Ltd., third edition, 1924); Chapter XIV, p. 665.

Comparisons are odious only to those who come out of them badly: to the rest they are instructive.

Every technical specialist should occasionally, for the good of his soul and the pliancy of his mind, reduce to words of not more than three syllables, descriptions of the technical processes and practices with which he has an easy familiarity. Obviously there are some statements which can be made only by using technical terms; but even when you are writing for a technical audience, it is advisable to ration those terms and to use plain language. It would be silly to say "avoid long words"; but it is sensible to suggest that you should avoid long sentences.

Today thousands of people who write and speak for the public are unintentionally obscure. Public pronouncements are made in a special kind of language. Indeed, the language which ministers and politicians almost habitually use is as unrelated to the ordinary conversation of everyday life as Tailors' English. What I call Tailors' English is that old-fashioned subservient language still used by tailors in letters to their customers. "We have the honour to be, sir, your obedient servants." "Hoping to be favoured with your further esteemed commands." "We beg to acknowledge the receipt of your esteemed favour of the 13th inst. and to assure you of the continuance of our respectful attention." Anybody uttering such sentences, either to express their thanks or to acknowledge some instructions or other, would at least be understood, although they might pardonably be regarded as eccentric. Yet statesmen, politicians, officials, and those queer, and not very artful dodgers called "Government Spokes-

men" often use language which is just as remote from the realities of social intercourse. Consequently although they are heard, they are not understood.

In the U.S.A. there is far less misunderstanding caused by the language of those who make public speeches. When American public men are not attempting to imitate Abraham Lincoln, they use racy, colloquial phrases; though when they have nothing to say and want their audience to experience a warm, comfortable feeling that all is well, they are just as expert in making windy and pretentious speeches as our native demagogues.

Words may achieve reverberating splendour; they can stir the blood and paralyse the mind, as Hitler, Goebbels, Mussolini, Sir Oswald Mosley, Sir Richard Acland, Ben Hecht and many other voluble specialists in propaganda have demonstrated in a variety of ways. Platitudes tricked out in high sounding words become potent when they create or resurrect comforting prejudices; but even more debilitating to the critical faculties is the calculated evasive statement, which uses some artful technicality to mask a half-truth or a lie.

Early in the Second World War, when our need for aircraft was desperate, the appropriate minister stated that aeroplanes "were accruing to us." The words suggested that something advantageous was happening connected with aircraft production: it was not in the public interest to say exactly what. Again, during the fuel crisis of 1946, the appropriate minister adopted a technical phrase, "shedding the load." He used it constantly to mitigate the cold shock of the truth,

which was that electrical power was being cut. It was not, perhaps, in his party's interest to say what was or was not happening.

Members of all political parties are guilty of muddling the meaning of what they say, either because they want to let the public down lightly, or want to keep them quiet, or have nothing to say and so deliberately choose their words to hide their own vacuity. Letting the public down lightly has led to the use of cushioning words. One of them is "unilateral," which is supposed to soften the impact which the simple term "one-sided" would make upon ordinary people. If it was generally realised that some power or body or group was trying to force a one-sided bargain upon our statesmen or officials, rebellious common sense might be mobilised to force those statesmen and officials to say "no" to a proposition that ordinary people wouldn't entertain at any price. Another cushion is "short supply," which sounds perhaps rather more hopeful than the plain word "scarce." There is a vague suggestion that "short supply" may represent a temporary condition. It cushions the blow that "scarce" inflicts, and, by implication, absolves the user from the need to supplement his statement that this or that is scarce by admitting that he doesn't know whether the duration of the particular scarcity is likely to be depressingly long, or whether it may be permanent.

When a public man with mind, character and courage, tells his countrymen the truth, he uses words which everyone can grasp, and the way he arranges them is the measure not only of his genius for language but his sincerity of purpose. Should we have remem-

bered anything that Abraham Lincoln had said, if the Gettysburg speech had ended with this sort of statement: "And we have here entered upon this undertaking in order to keep faith with those who have sacrificed their lives, that in a new atmosphere of freedom the conduct of affairs for the citizens of this nation, with the help of the Almighty, and through its constitutionally elected representatives, shall never cease to operate for the benefit of the whole community"?

And would Abraham Lincoln have been worth remembering if he had said that, instead of: ". . . that we here highly resolve that these dead shall not have died in vain; that this nation, under God, shall have a new birth of freedom; and that government of the people, by the people, for the people, shall not perish from the earth"?

Would the British people, faced by the disaster of 1940, have been heartened and hardened, if Winston Churchill had said: "Inevitably we shall have to enter a period of rapidly contracting standards of life, which may cause widespread inconvenience, and be accompanied by lethal dangers of a kind we have not hitherto experienced, so we have a prospect of great hardship and, indeed, misery, and exhausting, continuous work, for which our only compensation will be the knowledge that such conditions are inescapable"? Would Churchill have been a leader at all if he had uttered such apologetic tosh instead of those words that cut like a knife through the skin of illusion and complacency to the bitter core of reality: "I have nothing to offer but blood, toil, tears and sweat"?

Who would recall Julius Caesar's three famous words, Veni, vidi, vici, if instead he had said something which we might have construed as: "I organised an exploratory expedition, followed by a preliminary survey, concluding with military operations which were brought to a successful conclusion"?

Would we have drifted into the international catastrophe of the Second World War if our statesmen had used plain language instead of searching for such words as "appeasement" to hide their condition of limp funk? There was a period in which public men, instead of saying what they meant, shuffled about trying "to find a formula" which might mean anything. Ambiguity is a deadly sin in writing or public speaking. Obscurity is another. And when these sins are clothed in jargon, the result is not only repellent, but shameful.

Commenting upon an interim report of a special committee of the General Council of the T.U.C. *The Times* quoted this sentence:

"The Government on its part is encouraged and assisted in its own direct efforts to maintain price stability by the recognition by individual trade unions of the part they can play, in circumstances which the T.U.C. is convinced are unprecedented, in the maintenance of price stability, by their acceptance of the obligation to continue to use their considerable power and authority in wage negotiations with a full sense of their responsibilities to their own members and to the nation as a whole."

The Times dismissed this statement by saying: "Seldom can pompous verbiage have so inadequately disguised the shirking of a public duty." But what *was*

that committee trying to say or to avoid saying? Did the members know themselves?

There are thousands of examples of pompous verbiage to be found every day in the Press, in official pronouncements, in public speeches and even in the publications of H.M. Stationery Office. Jargon, reach-me-down phrases, and unnecessary adjectives jostle each other in unwieldy sentences, elbowing out sense and meaning. Most people use far too many words for saying anything. An article entitled "Putting it Briefly," by Major Oliver Stewart, published in the *New English Review* (January 1948), drew attention to the unnecessary and insignificant words which are peppered over articles in newspapers and periodicals. What Major Stewart had to say about what he calls "semi-automatic words and phrases" is applicable to all forms of writing. With his permission I am making the following quotations from that article:

"Didactic words and phrases like 'clearly,' 'plainly,' 'let it be remembered,' 'common sense demands,' 'it must be admitted that . . .,' 'it is an incontestable fact that . . .,' 'it does not require much perspicacity to see that . . .,' 'there can be no possible doubt that . . .,' may be used significantly, but they are repeatedly used insignificantly. They spring readily to the pen and give an illusion of urgency. Then there are the vague magnifying epithets like 'considerable,' 'very,' 'special,' 'outstanding,' 'substantial,' 'immeasurable,' 'immense,' 'tremendous.' There are also the lunatic locutions like 'as soon as may be,' 'to say the least,' 'remains to be seen,' 'not unmixed with . . .,' 'it stands to reason,' 'it goes without saying that'; and there are the pom-positities like 'in the entire civilised world of today,'

'for the whole human race all over the globe,' and 'in every department of our communal life.'"

These semi-automatic words and phrases should be slain; and the note of needless urgency and unnecessary emphasis could go too. Major Stewart was not criticising prose style or picking holes in grammatical construction; he was dealing with redundancy with the object of raising "the ideas-to-length ratio and so to get more from a given space." He gave the following example of a paragraph from *Nature* (July 28, 1945) consisting of 155 words:

"Not the least significant part of Colonel Urwick's address is the opening part, in which he stresses the need for precise thinking and for exactness in the use of words. Words are the tools with which men think, and scientific workers would be more effective in the interpretation of their work to the community if they kept that axiom more constantly in mind. In any event, it must be regarded if we are to achieve the integration of scientific workers and technicians with each other, and of science and technology with the life of the community. A first step to the new kind of thinking, towards seeing our problems as a single problem, to the integration which will eliminate the confusion into which our civilisation has fallen since the industrial revolution, is a clear understanding of the words we use as our tools of thought, and in particular of the distinction between compromise and integration."

Major Stewart cut 43 words from this paragraph without, as he said, "altering the primary structure, transforming the phraseology, or touching the two ideas it contains." After this reduction of more than 27 per cent the paragraph read thus:

"Colonel Urwick's address, in the opening part, stresses the need for precise thinking and for exactness in the use of words. Words are tools with which men think, and scientific workers would be more effective in the interpretation of their work to the community if they kept that in mind. It must be regarded if we are to integrate scientific workers with technicians, and science with technology with the life of the community. A first step towards the integration which will eliminate the confusion into which our civilisation has fallen since the industrial revolution is an understanding of the words we use, and in particular of the distinction between compromise and integration."

Both practised and unpractised writers can be, and often are, redundant. The writer on a technical subject can be just as big a sinner as the sensational journalist, who loves to create an atmosphere of drama or romance. In popular newspapers the scene is always "dramatic"; the girl whose hair is just off-brown is always "blonde," generally a "ravishing blonde." Sir Alan Herbert's book, *What a Word!* should be read with attention by everybody who by inclination or necessity is compelled to write a book, or indeed anything that is long enough to claim the time and strain the patience of his fellow men. If only all business executives and civil servants would read it, take it to heart, and act upon it, millions of words would be saved annually, and as words devour paper, tons of that precious and costly stuff would be saved too.[1]

J. B. Morton, "Beachcomber" of the *Daily Express*, includes in his book, *Morton's Folly*, what he calls "A Dictionary for To-day." So many of the terms he has

[1] *What a Word!* by A. P. Herbert (Methuen & Co. Ltd., 1935).

collected have passed into common use, that their inanity is generally unobserved when they appear in a newspaper or a book. Here are two extracts from his burlesque dictionary:

"*Arctic Conditions:* A cold day in England."
"*Edict:* A statement about bathing-dresses, made by town councillors."[1]

It is good reading, and I recommend it as a precautionary exercise.

Another trap into which authors can fall is repetition. That boisterous paper, *The New Yorker*, publishes a section headed "Falling in Love with Sound of Own Words Department." The extracts quoted under that heading form a sobering study for every author. It is easy to repeat certain forms of words, particularly if they convey some point that needs repetition. It is fatal to fall in love with any particular word, and you may do so unconsciously and drag it into paragraph after paragraph.

You should be able to correct all such habits when you have made a preliminary draft of your book. Write it first as a draft. Get the material written down. Then you can re-write, amplifying if necessary, and cutting, which will almost certainly be necessary. In that first draft you could include all kinds of things, such as relevant quotations from supporting authorities, or from records and documents which illuminate some point you are making. When you come to re-write the draft, you should consider the whole problem of

[1] *Morton's Folly*, by J. B. Morton (Sheed & Ward, 1933); pp. 325–30.

quotations. It is sometimes desirable to quote a few sentences or one or two paragraphs, particularly if you are concerned with an historical subject. But if you can do so, it is better to condense or to put into your own words the relevant quotation, and to make an attribution to the author, either in a footnote or by a numbered reference. Quotations are apt to break up a book, by making it less easy to read. Don't overdo them, or your references, otherwise your book may suffer from what has been called "foot and note disease." This chapter has many quotations, all used to illustrate some point. There were several more in my original draft. They went.

When you start re-writing and editing *your* draft, be ruthless with all material that interrupts or deflects the interest of the reader. Cut out brackets; avoid long parentheses. Use your blue pencil with courage. It is the most important tool the author has, and the reader's best friend.

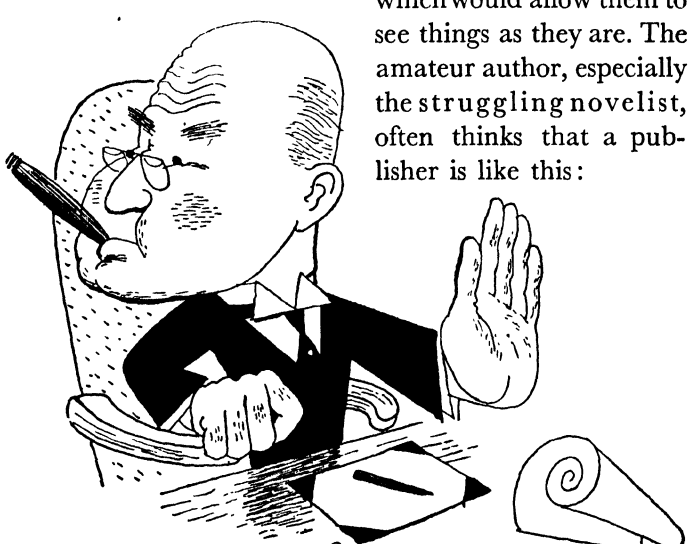
CHAPTER IV

PUBLISHER AND AUTHOR

"Every author, however modest, keeps a most outrageous vanity chained like a madman in the padded cell of his breast."

Afterthoughts, by Logan Pearsall Smith.

PUBLISHERS and authors are partners in a common enterprise, though this basic fact of partnership is probably appreciated more readily by writers of technical books than by novelists. We all have our pet misconceptions, for few people live and work with their minds consistently exalted to the level of objectivity which would allow them to see things as they are. The amateur author, especially the struggling novelist, often thinks that a publisher is like this:



His experience of trying to get manuscripts accepted may have consolidated his belief that a publisher is a confirmed "no"-man who automatically rejects the works of unknown authors. This belief is occasionally nourished by some unfortunate and much publicised experience. A story, possibly apocryphal, is related about a now famous American novelist, whose first book was rejected by nearly every publisher in the United States. When he had worked through the list, he sent the manuscript back to the first firm he had tackled, but this time he labelled the parcel in bold red letters: TO BE KEPT IN A VERY COOL PLACE UNTIL READ. The book was accepted within three weeks.

Antics like this may sometimes be justified in the United States, where publishers, in common with many other people engaged in business, are so devoted to orderly office systems and "safety first" policies, that any vigorous exhibition of originality at least arrests attention, even though it may not always win responsive admiration. The author who used that label would never have got his book published if it had been a bad book. Incidentally, he would have found English publishers far more enterprising and thorough in their methods; and even if he had written a bad book which nevertheless showed some promise, it is more than likely that he would have received advice and encouragement from several publishing houses. Far from being the unapproachable stuffed shirt shown on the page opposite, the publisher, who is far more often the friendly type of human being shown at the top of the next page, might even have told him that the writing of two or three books which nobody would or could

publish was the price he would have to pay for learning his job as an author.

It is temptingly easy for the writer of fiction to believe that his first book is so good that it amounts almost to a work of genius. Thank God nobody was willing to publish the first five novels that I wrote: had they been printed I should have spent the rest of my life trying to live them down. At the time I thought they were pretty good; so of course I acquired the usual grouchy prejudices about publishers, and never imagined that they took the slightest trouble about the manuscripts of unknown writers. I have since found that with one exception—who being dead is now forgiven though not forgotten—publishers with whom I have done business are agreeable, accommodating, trustworthy and encouraging people, who make large

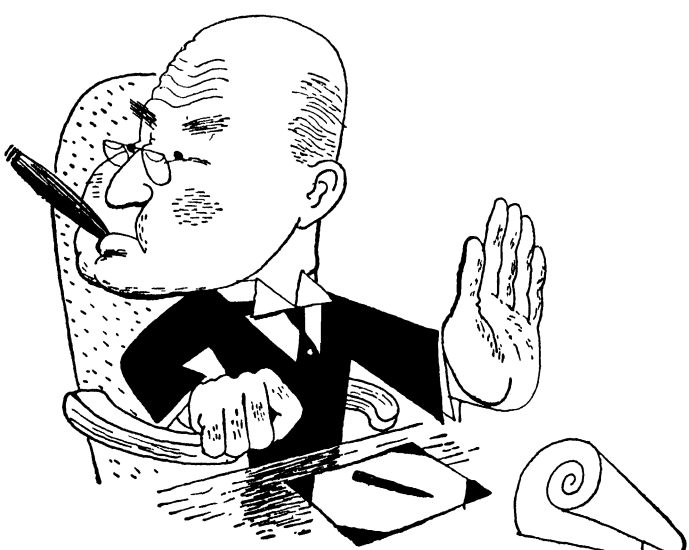
and generous allowances for the often strange and frequently irritating habits and ideas of authors.

Naturally, publishers have their own illusions about authors. After dealing with their creative efforts, becoming inured to their assertive and often extravagant vanity, and being consistently patient with their unpredictable vagaries, publishers may be forgiven if they are inclined occasionally to think of authors like this:

And because we are all beginning to grow rather bored with technicians and suspicious of experts generally, having gradually discovered that they can be just as arrogantly exasperating and cocksure as other kinds of intelligent people, though with the unfair advantage of being able to intimidate or baffle their fellow men with their specialised knowledge, the publisher's pre-conceived ideas about the author of a

technical book may be a bit fanciful. He may even think of him as something arid and pernickety, like this:

Which is just as idiotic as thinking of a publisher like this:



for both parties are usually as unexcitingly normal in appearance as this:

and, *inescapably*, they are *partners*.

That fact of partnership should never be forgotten; and as partners, both publisher and author take risks. The publisher is risking his money, and you, the author, are risking your time. And, in an abnormal period of paper shortage, a publisher is risking something which is almost as important as money, for he is backing your work with a part of his precious paper allocation.

No author should agree to pay a penny towards the cost of publishing a book; if a publisher ever suggests that you should do so, don't do business with him. But the suggestion is unlikely to be made if you choose your publisher with care. Sir Stanley Unwin has said

that authors "would be well advised to take as much care in choosing a publisher as they would exercise in selecting a solicitor or a doctor"; and I commend his wisdom.[1]

As the author of a technical book, you have a well-defined choice of publishers to approach. If the subject of your book is such that the publisher is prepared to discuss an agreement with you after seeing the outline, you may be certain that your plan is a good one. But if a publisher wants to see three or four specimen chapters in support of your plan, or even the whole book, it is a reasonable request. You may have something important to say; you may be shedding new light on some subject; but unless you can express yourself clearly, you are much more likely to shed new darkness; and the publisher has to be convinced either of your literary ability, or at least of your capacity to produce material which may, with skilful editing, become fit for publication.

Having discussed the book with the publisher and delivered the outline and some specimen chapters, the terms on which the book is to be published are set forth in the form of an agreement. The most practical way of explaining the terms and character of such an agreement is to include in this chapter the agreement made between George Allen & Unwin Ltd., and myself, for the publication of the book which you are reading. So I am reproducing here, clause by clause, that agreement, and making brief comments and explanations about each.

[1] *The Truth About Publishing*, by Sir Stanley Unwin; Chapter IV, p. 106.

The opening of the agreement sets forth the relative positions and titles of author and publisher and the provisional title of the book, as follows:

AN AGREEMENT made this 13th day of August, 1947, between JOHN GLOAG, Esq., of [address] (hereinafter called "the Author") for himself, his executors, administrators and assigns, of the one part, and GEORGE ALLEN & UNWIN LTD., whose registered office is at 40 Museum Street, London (hereinafter called "the Publishers"), for themselves, their successors and assigns of the other part. Whereas the Author is writing or has written a literary work at present entitled GUIDE TO TECHNICAL WRITING which he desires the Publishers to publish.

The provisional title, *Guide to Technical Writing*, was discarded after the opening chapters had been written, and it is always advisable to settle the final title as early as possible, so that the publisher may include it in advance notices of his publishing programme.

The opening of the agreement is concluded by the words: "Now it is hereby agreed between the parties as follows:—" And that sentence is followed by twenty clauses, some of which have been deleted because they are inapplicable either to the character of the book or the existing business arrangements which I have with the publishers. It may seem impertinent to suggest that no author should sign an agreement without reading and understanding every word of it, so that he fully appreciates his obligations; but I emphasise this point, because partners should always know exactly what is expected of them. When mutual obligations are accepted, their extent and character should be fully understood by both parties, so that no grievances may

arise from the misinterpretation of any clause. Here are the clauses of my agreement with my publishers:

1. The Author shall complete and deliver ready for the printer the typescript of the said literary work consisting of 30,000 words or thereabouts to the Publishers not later than 30th June, 1948, and the Publishers shall forthwith put the work into type and publish the same within three months of the last sheet being passed for press unless prevented from doing so by strikes, lock-outs, or other circumstances beyond their control. Should the Author neglect to deliver the manuscript by the prescribed date the Publishers may, if they think fit, decline to publish the work, in which case this agreement will be annulled subject to the proviso that the Author shall not be at liberty to publish the work elsewhere without first offering it to the Publishers on the terms of this agreement. The Author undertakes to read and correct his proofs and to return them to the Publishers within ten days of their receipt.

(1) It is essential for the publisher to have firm dates, otherwise he can never plan his production. In a technical work, which includes diagrams, statistical information, and illustrations—material which would need careful checking—additional time would be allowed for the author to correct proofs. This is a matter for arrangement between publisher and author.

2. In consideration of the payments hereinafter mentioned the sole right for the period of unrestricted copyright is hereby vested in the Publishers to produce or reproduce the work or any substantial part thereof in material legible form throughout the world, ex U.S.A.

(2) This is usual, though some authors may, after

discussion with the publisher, decide to let him handle the American rights. With technical books publishers are generally in a much better position than authors to arrange for foreign publication.

3. All details as to the time and manner of Production, Jackets, Embellishments, Advertisement, sale and terms of sale (except as hereby otherwise provided), and the number and destination of Free Copies for the Press or others, shall be left to the sole discretion of the Publishers, who shall bear all expenses of Production and Advertising, except as hereby otherwise provided. If any alterations from the typescript or copy as delivered to the Publishers be made by the Author in the proofs of the said work, the expense incurred by the Publishers in making such alterations over and above a sum equal to Ten per cent (10%) of the original cost of composing the said typescript or copy shall be borne by the Author.

(3) This is usual and fair. If the author wants to make any alterations or additions, he should make them in the typescript before he delivers it to the publishers. (This matter is discussed in detail in Chapter V.)

4. The published price of the work shall be about 7s. 6d. per copy, but the Publishers shall have power in their discretion to alter the published price of any edition as they may think fit, and in not less than two years after first publication to sell the residue of any edition in whole or in part at a reduced price or as a remainder provided that the Publishers will give the Author the first option of purchasing the remainder stock and such option shall be deemed to be given if the Publishers post to the Author at his last known address an offer of such remainder stock and this offer shall be deemed to be refused if no reply is received by

the Publishers within three weeks after posting such offer.

(4) Usual and reasonable. At times, when costs of production, labour and materials fluctuate, it is not always possible finally to settle the ultimate selling price of a book until the manuscript has been delivered and printing estimates obtained.

5. While in possession of the rights conferred by Clause 2 hereof the Publishers shall deliver to the Author not later than the 30th day of April of each year, a statement of (1) the number of copies printed, and the number of copies sold during the year before the preceding 31st day of December of any Edition which shall be published by the Publishers and of (2) the sums which shall during that year have been received from any transaction under Clauses 7, 8 and 9 hereof, provided however that no statement need be delivered or payment made in respect of any year, after the first, in which the sum due is less than ten shillings (10s.). In the first year following publication the Publishers shall render an interim half-yearly statement on the 30th day of September and thereafter if requested to do so by the Author on or about the 30th September in any year provided the sums earned during the six months ending the preceding 30th June have exceeded Five Pounds.

(5) This is normal accounting procedure adopted by many publishers.

6. The Publishers shall, at the time of the delivery of the said statement, pay to the Author

(*a*) On all copies of the English Edition sold in Great Britain other than those hereinafter mentioned a Royalty of 10 per cent on their published price,

rising to 12½ per cent after the sale of 1,500 copies and to 15 per cent after 4,000 copies.

(*b*) On the published price of all copies sold in Great Britain of any Cheaper Edition that the Publishers decide to issue, a Royalty of 10 per cent if the published price is above 2s. 6d. and 5 per cent if at or below 2s. 6d. No such cheap edition shall be issued within three years of the original publication without the Author's consent. If a later edition of the said work should be published at a price higher than that of the original price the rate of royalty shall be reviewed.

(*c*) On all copies sold for export, including any specially printed edition or editions, whether bound or in sheets, but excluding copies or editions mentioned in section (*d*) hereof, the Publishers shall pay to the Author a Royalty of 12½ per cent of the precise amount received by them from such sales unless such copies are sold subject to a Royalty on the published price, in which case the Publishers shall pay the Author 75 per cent of the precise amount of Royalty received by them.

(*d*) All sums earned under Clauses 7, 8 and 9 following:

Provided always that on copies sold at or below half the published price the Royalty shall be 10 per cent of the net receipts and that no Royalties shall be paid upon any copies presented to the Author or others, or to the Press, or destroyed by fire or water or in transit or otherwise, or sold at less than cost, and that the Royalties provided for in this Clause shall not be payable in respect of any sales under Clause 7 hereof.

(6*a*) The rise in royalties is facilitated by what may be called the economic laws of mass production, for the individual cost per copy of a book is reduced on a

long run of printing; also on subsequent editions, printed from the same type, the initial cost of composing the type and making the blocks for the illustrations has been covered.

(6*b*) Usual and reasonable.

(6*c*) Usual and reasonable.

7. The Publishers shall be entitled to market by sale, lease, licence or otherwise such of the rights granted in Clause 2 hereof as they do not directly exercise themselves and shall pay the Author the following share of the net receipts from all such transactions:

(*a*) in respect of the American, Dominion, Colonial, Continental and serial rights 75 per cent.

(*b*) in respect of editions of Book Clubs 10 per cent or if the authorization of such or any other cheap edition is made in consideration of a fee or royalties 50 per cent, but all other Book Club transactions shall be subject to negotiations between the Author and Publishers.

(*c*) in respect of the translation rights 75 per cent.

(*d*) in respect of sums received, less expenses incurred in making and supplying material, for any rights which the Author has vested in the Publishers, to reproduce illustrations, maps, plans, diagrams, 50 per cent.

(*e*) in respect of fees received for permission to print extracts, abridgments, "digests," precis, and to reproduce the work or any part of it with a musical setting, 50 per cent.

(*f*) in all other forms of production and reproduction whether in whole or in part or by microphotographic or other mechanical process of reproducing the printed word in legible form also by means of "talking book" 50 per cent.

(*g*) two-thirds of any sums obtained by them (less expenses) in respect of infringement of copyright.

No sale of the rights in respect of Clause 7*d* and 7*e* shall be made without the consent of the Author.

(7) These are all reasonable provisions which protect the work and the pocket of the author.

8. The Publisher shall have the sole authority to sell, lease, or licence the non-visual broadcasting and amateur dramatic rights in the work and shall pay the Author 70 per cent of the net receipts from any such transaction.

(8) This clause has been deleted as it affects broadcasting rights, which, because of my special connections, I have, as an exception, reserved.

9. All rights to perform or deliver the said work, except on the professional stage and save as hereinbefore mentioned but including cinematograph, talking picture, television or by the means of any other mechanical contrivance, shall be vested in the Publishers who shall be at liberty and have full power to make any disposition thereof, in whole or in part, by sale, lease, licence or otherwise, in the Publishers' name as owners and the Publishers shall pay the Author 80 per cent of the net amount received by the Publishers in respect of such disposition; but upon one month's notice in writing provided no disposition of such rights or any of them has been made, the Publishers shall at the Author's request re-assign all such rights to the Author subject to an undertaking by the Author to pay the Publishers 10 per cent of all sums paid to the Author or his agent in respect of any disposition by the Author of such rights or any of them which has resulted either wholly or in part from book publication.

(9) This clause is also deleted. Film and television rights do not arise with this type of technical book.

10. The Author or his authorized representative shall have the right upon written request to examine the books of account of the Publishers in so far as they relate to the said work, which examination shall be at the cost of the Author unless errors, otherwise than from interpretation of this agreement, exceeding Ten shillings shall be found to his disadvantage, in which case the cost shall be paid by the Publishers.

(10) This is a sensible safeguard for both parties.

11. The Author shall not, without the consent of the Publishers, publish in the territory covered by this agreement any abridgment of part of the said work in any volume.

(11) This is only reasonable and protects the sale of the book.

12. The Author shall without any payment or consideration other than is hereinbefore mentioned, assist the Publishers as far as possible, by revision or otherwise, in keeping the work up to date, and shall supply an index to the said work if in the opinion of the Author and the Publishers an index be desirable. In the event of the Author failing or being unable by reason of death, absence abroad or otherwise to edit or revise the work or supply new matter where needful, the Publishers may procure some other person to edit or revise the work or supply new matter and may deduct the cost thereof from the Royalties payable to the Author.

(12) This protects both publisher and author from the issue of a work which may have become out of date.

13. The Author shall be entitled to receive on publication six presentation copies of the first edition of the work, and shall have the right to purchase further copies for personal use on trade terms.

(13) A long-established practice and a good one.

14. The Author hereby warrants to the Publishers that the said work is an original work, has not been published in book form, and is in no way whatever a violation of any existing copyright, that it contains nothing obscene, indecent or libellous, that all statements contained therein purporting to be facts are true, and that he has full power to make this agreement, and that the publication of the said work will in no way be unlawful, and will indemnify the Publishers against any loss, injury or damage, including any legal costs or expenses incurred by the Publishers in consequence of any breach of this warranty.

(14) This clause underlines the care which an author must exercise in all matters concerning the reproduction of illustrations or quotations from other works. The Incorporated Society of Authors, Playwrights and Composers can advise authors about insurance against actions for infringement of copyright or libel, brought as a result of their published work. The Authors, Playwrights and Composers Insurance Association undertakes such coverage. To prevent any irresponsible abuse of such protection, the author who takes out an insurance policy is required to bear at his own risk a percentage of each and every claim (including claimants' law costs).

15. The Author shall on delivery of the manuscript supply to the Publishers without additional remuneration except as provided in Clause 18 hereof, all photo-

graphs, pictures, diagrams, maps, and other material from which to illustrate the said work and in respect of any such material of which the copyright is now his own the Author shall at his own expense obtain from the owners of the respective copyrights and supply to the Publishers written permission to reproduce such material in connection with the said work, and the Publishers shall prepare blocks therefrom at their own cost for the use of their Printers and Binders. Such pictures and material supplied by the Author shall, when done with, be returned to the Author if he so requires, but the Publishers shall not be liable for accidental damage thereto, or for loss thereof.

(15) This clause is qualified by clause 18.

16. The Publishers shall have the first opportunity of considering for publication the typescript of the Author's next literary work suitable for publication in book form. If, three months after such work has been submitted to the Publishers, no terms shall have been agreed for its publication, the Author shall be at liberty to enter into an agreement with any other Publisher.

(16) Although this has been deleted from this particular agreement, because the point is covered by agreements for other work upon which I am engaged, it is a fair clause, because it protects the financial investment the publisher is making in an unknown author, whose first book may be a commercial failure though it may begin to establish the author's reputation. Subsequent books by that author may be successful; and it is to the mutual advantage of publishers and authors to retain their association. A good list of authors is an investment for the publisher. A good publishing house is an investment, in terms of reputation, for the

author, apart from the superior ability of such a house to sell his books.

This point is subject to more misunderstanding and prejudice than almost any other. I was recently discussing with an experienced and established writer the work of a promising young author, whose first rather highly technical book had just appeared. The established author had an idea that he might like to collaborate with the younger man in a book dealing with a subject on which they were both obviously qualified to write with authority. "Do you happen to know if he's free to take on a book?" he asked.

I knew he was under an agreement to offer his publisher his next book, and I said so. My companion's immediate reaction was: "Oh, so those wily business men have tied him up, have they?"

It was part of that particular author's political creed to assume that all business men were crooks, and no doubt he thought that all publishers were like this:

Few publishers adopt a dog-in-the-manger attitude about their authors, particularly when an author is

invited to contribute a volume to some series of books which another publisher may be issuing. My own experience has confirmed my view that publishers are generous and far-sighted people, who never stand in the way of an author who works and desires to establish his reputation. For example, several years ago, I was invited by A. & C. Black Ltd., to contribute a volume on *English Furniture* to their Library of English Art, and although at the time I had an agreement with George Allen & Unwin Ltd., which obliged me to offer them my next technical book, they unhesitatingly encouraged me to accept Black's invitation.

17. If (*a*) the Publishers fail to fulfil or comply with any of the provisions of this agreement within one month after written notification from the Author drawing attention to such failure and expressing an intention to rely upon this clause, or if (*b*) an order is made for an effective resolution passed for the liquidation of the Publishers other than a voluntary liquidation for the purpose of reconstruction only or if (*c*) after the work is out of print or off the market they have not within three months of a written request from the Author issued a new edition or impression of at least 500 (five hundred) copies then and in any of these events this agreement shall automatically determine without prejudice to any claim which the Author may have either for moneys due and/or damages and/or otherwise, provided that in the case of (*c*) the Author refunds any unearned balance of any advance payment and buys back from the Publishers all blocks, stereo-plates, moulds, designs and engravings specially made for the said work at one-half of their original cost.

(17) This is usual and fair to both parties.

18. The Publishers undertake to pay the Author up

to £..... in connection with the expenses incurred in the preparation of material for the illustrations in the said work. The Author shall submit a full account of the expenses incurred under this clause to the Publishers.

(18) This type of clause is a matter for discussion between publisher and author, and is dependent upon the character and number of the illustrations. The sum (if any) agreed will obviously vary, and is usually adequately covered by royalties as provided in clause 15.

19. The Publishers shall pay the Author the sum of £..... on publication of the said work, on account and in anticipation of all monies to be earned under this agreement.

(19) An advance payment on account of royalties is not usual with unknown authors. The amount is a matter for negotiation between both parties. An "accrued advance" is a fair arrangement, as the author then receives immediate payment of royalties earned on the orders placed prior to publication.

20. All monies earned under this agreement shall be paid to the Author's agent [name and address] whose receipt shall be a full and valid discharge.

(20) This is inserted because all my work is handled by a firm of literary agents, through whom payments are made and who deduct 10 per cent of my earnings to reward their capable services.

That concludes the agreement which is signed by publisher and author. It is fair to both parties; unless it was it would be useless. It is precise; if it wasn't it would be worse than useless. It gives both publisher

and author a mutual and continuous interest in the book it concerns. If it didn't it would discourage one or other of the parties.

The worst form of discouragement an author can suffer, apart from having his work rejected by everybody, is to sell his copyright outright for an agreed sum of money. The time will almost certainly come when he will feel like a parent who has sold his child in a slave market. Never, under any circumstances, part with your copyright, however tempting a lump sum may be offered for it. A book is an author's property, and should remain his property. Part with your copyright, and nothing protects your work from being published anywhere and anyhow, and even tinkered with, or cut up and issued piecemeal in forms with which you do not agree, years after you have written it. Keep your control over your work and your financial interest in it by retaining your copyright.

CHAPTER V

PREPARING YOUR MATERIAL

WHETHER you write a book by hand, or use a typewriter, or dictate, and amend a typescript draft by hand, you must, when the writing is finished, have a fair typescript copy made for the publisher. Clean copy, presented in a consistent style, helps both publisher and printer. It is essential to use typescript, even if your handwriting is like copperplate, or as clear and beautifully formed as Arnold Bennett's was. Anything but typescript complicates the work of the publisher and makes it difficult for a printer to assess the amount of work needed for composition (that is, setting up the type) and the amount of paper that the book will need. I have referred to Arnold's Bennett's handwriting, because it was so exceptionally clear and he took such pride in it, that the entire manuscript of *The Old Wives' Tale* was reproduced, page by page, and published in a special *de luxe* edition for the benefit of people who collect such things. But typescript is necessary for you, and for most authors, when you finally present your work to the publisher.

The typing should be done in double spacing, on quarto sheets of paper. There should be a margin of not less than two inches on the left-hand side of the page; the pages should be numbered consecutively, and one side of the paper only should be used. About one

inch of space should be left at the top of the page, with the page number centred in it, and approximately one inch at the bottom of each page. Theoretically, this typescript copy should contain no corrections or alterations, but a few, made neatly either in typescript or in ink, are permissible, but if they are at all extensive, then the page on which they appear should be re-typed. It is advisable to keep at least one carbon copy of the typescript, and the top copy should be sent to the publisher.

It is important to adopt a consistent style throughout this typescript copy, for such things as references, footnotes, quotations, notes and headings. It gives extra work to the publisher and printer if an author cannot make up his own mind about how he wants footnotes or marginal notes, or quotations or paragraphs which need some special emphasis, to be set forth.

Consistency in spelling, or in the use of capital letters, is essential. For example, if you are referring to a century, make up your mind whether you are going to say "the eighteenth century," spelling out the word "eighteenth," or whether you are going to say "the 18th century," or whether you are going to use Roman numerals and say "the XVIIIth century." Dayrell Reed and some other historians omit the word "century" and refer to it by Roman numerals only, thus: "Boiled down, then the history of IV and V as presented by Geoffrey amounts to this . . ."[1]

When you refer to books, underline the titles, so that they will be set in italics by the printer. The titles of

[1] *The Battle for Britain in the Fifth Century*, by Trelawney Dayrell Reed (Methuen & Co. Ltd., 1944); Chapter III, p. 109.

newspapers, magazines or journals, should also be underlined, and the full and proper title of the paper should be given, such as *The Times*. The titles of articles or of papers delivered to learned bodies should be put in quotation marks; decide whether you are going to use single or double quotation marks, and then abide by your decision.

When you quote, you may prefer to have an indented paragraph, set in a slightly smaller type than the rest of the text, or set solid, that is, without leading. If you do this, you may omit quotation marks, and if you want to see how it looks, turn back to Chapter IV, where the clauses from the agreement are set solid. You can indicate a preference for indenting in your typescript by enlarging the left-hand margin from two to two and a half inches, and for solid setting by using single spacing for the typing of the relevant sentences. If you keep your quotations down to a minimum, which is generally desirable, then it is kinder to your reader to avoid changing the size or setting of the type, for it breaks up the page, and worries the eye.

Consistency is important in the use of capital letters. Are you going to refer to the points of the compass in capitals or not? Again, make up your mind and abide by your decision. Your decision will also be needed when you refer to officials, or departments, or institutions, and governments. Are you going to spell "government" with a capital G, thus putting it typographically on a level with the Deity, or are you not? Your decision should be guided by the nature of the reference you are making; if you are mentioning the British Government then you should use a capital G, as you would use a

capital A when referring to the British Army, or a capital N for the Royal Navy. Political bad manners have had a regrettable influence upon many writers, who are not always aware that by using a small c for Communist, and a capital T for Tory, they are being idiotic. The Negro race is consistently insulted by writers of all kinds, who spell Negro with a small n. Nobody would refer to the Maoris of New Zealand with a small m, or the Hindus with a small h, or the Scots with a small s. Why should Negroes be selected for such racial discrimination? References to events may cause confusion over capitals: are you going to refer thus to the Second World War or like this: second world war? When you mention the Victorian age, are you going to give the word "age" a comparable importance to Victorian? Are you so moved by the thought of the Iron and Steel industry or the Cotton industry that you are going to perform the equivalent of a typographical genuflection, or will they appear as the iron and steel industry, and the cotton industry?

Then there are hyphens, which trip up so many authors. Once again, be consistent in the way you use them. Many of the things which I have said here and in earlier chapters are elementary, and should be obvious; but I repeat that such simple matters are overlooked with such frequency by writers, that I make no excuse for emphasising their importance. I have read many technical books in manuscript, as they were sent by authors to a publisher, and I still find it difficult to believe that a specialist who is precise, conscientious, and able in his own technical field, seems to be unaware that, when he is writing, he becomes another sort of

technician, and is working in another technical field. It is this odd casualness of technical writers, particularly when they are writing their first book, which sometimes causes publishers to think that the author really must look like this:

Well, of course, we know he probably looks like this:

When the publisher, with gentle courtesy, points out

these shortcomings, even quite reasonable authors begin to think that he must look like this:

In Chapter II, footnotes were mentioned, and when you have finished the first draft of your book, you must make up your mind whether you want to use footnotes or numbered references, or both. There are six symbols which are used by printers to link a reference in the text with a footnote. Here they are:

* † ‡ § ‖ ¶

If there are many references which exhaust the number of symbols available, then two asterisks, two daggers, and so forth, are used, thus:

** †† ‡‡ §§ ‖‖ ¶¶

Spotted about a page, and keyed to the footnotes at the bottom of it, these symbols make the text look difficult; and in most books, footnotes are numbered.

When coming to a decision about this, it is well to remember how worrying books can be which suffer from "foot-and-note disease." It is kinder to your readers to omit footnotes, incorporating your quotations in your text, keeping them short, or, if you feel you must support some statement with extensive quotations from some original sources, then assemble all such material in a series of notes, numerically keyed to each chapter, as an appendix. By avoiding footnotes you make your book easier to read, and you may still furnish your readers with all the relevant references and authorities, by numbering those references consecutively through each chapter, and either listing them at the end of each chapter, or setting them out under their chapters at the end of the book. If you choose the latter method, it is a convenience to the reader to number your references consecutively throughout the book. This may mean more work for you in preparing the manuscript, but it is a boon to the reader, who may want to look up reference 172, and knows that he can go straight to it in the list at the end of the book, whereas, if it was reference 18 in Chapter IV, he would have to track it down under the chapter heading in the list of references.

Even numbered references distract the reader and make the text spotty, and there is a method of indexing references, chapter by chapter, which gives the author still more trouble, but eliminates the hitherto accepted

alternatives of footnotes or numbered references. Each quotation or reference to an authority is indexed alphabetically under the name of the authority, and the title of the work cited; and each chapter is followed by the applicable reference index. For example, the sentence that follows would have three index entries at the end of the chapter in which it occurred:

Thus the collectivist critic would disagree with Gibbon's assessment of the social and economic damage wrought by Diocletian on the grounds that our greatest historian was an eighteenth-century gentleman with a horror of taxation; yet Gibbon's views are identical with those of Flinders Petrie and H. A. L. Fisher.

Under Fisher, Gibbon and Petrie the reader would find in the reference index the relevant works, with the chapters and page references; and such an index could be expanded to include actual quotations that were mentioned but not incorporated in the text. If the individual chapters were long and the indexed references numerous, it would be tidier, though less convenient, if they appeared at the end of the book under their chapter numbers than at the end of each chapter. I have never seen this particular method used in any book I have read; but I am using it myself in a book which I am writing at present. Its advantage lies in absolving the reader from the irritating sense of obligation that footnotes and references implant: he is not constantly reminded to look up something whether he particularly wants to or not; but if he does want to check the source of a quotation or some reference to a person or an event, he can do so with ease. The author who takes this extra trouble lands himself with

a specialised index as well as a general index; but readers may be grateful.

The rules for references to sources which were mentioned in Chapter II, should be repeated here. When a work is first quoted or mentioned, the title, the author, the publisher, and the date and edition, should be set out in full; the title should be underlined and the name of the publisher, the date of publication and the edition should be put in brackets. You should be consistent about the way you mention publishers' names. The full title should be given, such as Thomas Nelson & Sons Ltd., or George Allen & Unwin Ltd., not just "Nelson," or "Allen & Unwin." Decide whether you are going to use the symbol called ampersand (&), thus: "George Allen & Unwin Ltd." or whether you are going to spell out the word "and" thus: "George Allen and Unwin Ltd." After the name of the publisher, and the date and the edition, you should give the number of the chapter or section referred to, and the number of the page or pages.

If an article or the report of a paper in a technical journal or a magazine is mentioned, the title of the paper should be given in quotation marks, then its author or authors, then the name of the journal, underlined, with the volume, number and date, thus:

"The Future of Civil Aviation," by Sir A. H. Roy Fedden. Journal of the Royal Society of Arts, Vol. XCII, No. 4670, July 21, 1944, pp. 421–64.

If an historical document is the source of a reference, then its title, origin and date must be given, also the

library, museum, or private collection in which it may be found.

Writers with a fondness for footnotes should read Hilaire Belloc's essay "On Footnotes," in his book, *On*. It cured me of the footnote habit, which I had rather badly before Belloc's words unmasked the practice, and showed that it was not only cumbersome, but could occasionally be used with an air of authority to support some doubtful or inaccurate statement. Belloc was writing specifically about footnotes used by historians; and how right he was when he said:

"For the most part, these enormous, foolish, ill-motived accretions are honest enough in their actual references, for the greater part of our modern historians who use them are so incapable of judgment and so lacking in style, so averse from what Rossetti called 'fundamental brainwork,' that they have not the power to do more than shovel all their notes on you in a lump and call it history. But now and then this temptation to humbug produces its natural result, and the references are false."[1]

Whatever you decide to do about footnotes and references, they must all be included in the typescript which you send to the publisher. That typescript should be preceded by what are known as *prelims*, the pages immediately before the first chapter of a book. When you prepare these prelims, you must start thinking in terms of left-hand and right-hand pages, and it is easy to remember that in a book, a right-hand page always bears an odd number, and a left-hand page an even number. The right-hand pages of a book are known

[1] *On*, by Hilaire Belloc (Methuen & Co. Ltd., second edition, 1925); p. 34.

as recto, the left-hand pages, or the back of a leaf, as verso.

The prelims may be numbered consecutively with the book, but more often they are numbered separately with small Roman numerals, the numbering of the pages of the actual book beginning at Chapter I; and it is advisable to adopt this method of numbering with your typescript, because your prelims may be extended by additional lists or other material, and if they are numbered on a separate system, they will not affect the other pages of the book.

The prelims appear in this order:

(i) The bastard title, which is usually called the half title. This is the first printed page of any book, with the title set on it, but nothing else.

(ii) Verso of the half title. This is either left blank or occupied by a list of works by the same author, if any.

(iii) The title page. This bears the full title of the book, with any sub-title which may be necessary. (Sub-titles should be avoided, and I say this although I have used an explanatory sub-title in this book.) Then should follow the name of the author, with or without his degrees, qualifications, distinctions, honours and so forth. The practice of putting under the author's name the statement that he is "Author of" and then three or four books, is not so tidy as listing these works on the verso of the half title. But if the book has a frontispiece there is a case for leaving the verso of the half title blank, and including references to the author's previous works under his name, on the title page. On this page also appears the name of a part-author or collaborator,

and sometimes the name of an illustrator or illustrators, with a reference to the general sources and character of illustrations, such as:

"With eight illustrations in colour, by Palette Knife, R.A., and twenty-four pages of illustrations from photographs, by Kurt Snap, and sixteen from line drawings, by Quill Penn, A.R.A."

The publisher's name and address go at the bottom of the page, and sometimes the date. This varies with different publishing houses: sometimes a colophon, or publisher's house mark, is included on the title page. In this book, the publisher's name and address are set forth in three well-balanced lines.

(iv) Verso of title page. This is the best place for the publication date and for any information about editions and reprints. The phrase "All Rights Reserved," or "This book is copyright," should also appear on this page, together with the name of the printer and the town or city where he is established. Occasionally, the name of the binder is included, also the name of the type used for the book.

(v) If there is to be a dedication, this is the page on which it should appear.

(vi) The verso of the dedication page is left blank.

(vii) The contents list. This may run over on to another page, and it is followed by the list of illustrations. The illustrations should be classified and listed separately, under these headings, though not necessarily in this order:

Colour plates (if any)
Plates in monotone
Illustrations in the text

A paragraph of acknowledgments should follow the list of illustrations, where the author expresses his thanks to owners of copyrights, proprietors or editors of publications, or individuals and organisations from whom he has received help in collecting illustrations or information. This paragraph should be kept as short as possible, and while courteous, should never be fulsome.

On the same page as the acknowledgments, a brief note should describe the system adopted for references. For example:

"Footnotes have been avoided throughout. References are indicated by figures in the text, numbered consecutively in each chapter; and the sources of these references are set out under their appropriate chapters at the end of the book, beginning at page . . ."

This concludes the prelims, and Chapter I begins on a right-hand page. If somebody has written a foreword or an introduction, or if you have done so yourself, this is often numbered with the prelims, in Roman numerals.

Having now prepared the typescript of the book, you have to present the illustrations. You must first make a list of these, classified as they are classified in the prelims, under colour plates, plates in monotone, and illustrations in the text. The descriptive legend or caption for each of these illustrations should be given to the publisher in duplicate. The top copy of the typescript of the captions will enable the printer to set them up in type, as a straightforward job without having to detach them from drawings or photographs. But, as a precaution against loss or the illustrations being mislaid (for printers and publishers as well as authors

are frail and not infallible when entrusted with material), carbon copies of the captions should be cut up and pasted on the backs of the illustrations to which they correspond.

The sorting of illustrations should be done by the author; he should not hand over to the publisher a confused mass of material, with photographs, drawings, diagrams, sketches, cuttings from magazines, or anything which he feels ought to be illustrated. Of course, *you* won't do that if you have read Chapter II and made a plan for your illustrations.

Having classified your illustrations, you should number them, so that the numbers may be related to the captions, and you may refer, if you want to, in your text, to any numbered plate or drawing. It is usual to refer to drawings in the text as Figure 1, 2 or 3, using Arabic numerals, the accepted abbreviation being Fig.: and for the plates, to avoid confusion, use Roman numerals.

It will simplify and save money on the production and printing of a book if all the illustrations which can be reproduced by the line-block process are kept for the text, and illustrations from wash drawings, or shaded pencil drawings, or photographs, which have to be reproduced by the half-tone block process, are kept together to occupy groups of four, eight, or sixteen pages, or better still, assembled at the end of the book, for, if they are printed from half-tone blocks, a paper with a coated surface must be used.

Having brought the preparation of the manuscript and the illustrations to the point where the mechanics of book production are affected, the technical terms

which have gradually begun to invade this chapter must be explained in the next.

There are some final matters about the presentation of material to the publisher. It isn't necessary to have the typescript elaborately bound; indeed, it would be sufficient to have the different chapters clipped together and put into a folder; but it must be easy to handle. Publishers constantly have to cope with material which authors submit in loose, unnumbered sheets. I have had to sort out a mass of typescript, interspersed with oddments of handwritten notes, numbered here and there as the author felt inclined, some of it on quarto paper, some of it on foolscap, variegated with jottings in pencil, and here and there a cutting from a newspaper pasted into a gap in the text, casually labelled by the author: "*This* is the sort of thing I mean." It says much for the patience and perseverance of a publisher that he should have sent such material, in such a state, to various readers for their opinion, instead of returning it to the author. (Incidentally, it had the makings of a first-class book, and when the author, whose first book it was, had tidied it up, it became one.) But successful publishers *are* consistently patient.

CHAPTER VI

BOOK PRODUCTION—TYPE AND PRINTING

"With twenty-five soldiers of lead I have conquered the world."

Early seventeenth-century boast, Author unknown.

METHODS for calculating the length of your literary material in terms of typescript were explained in the second chapter; and after length, the next matter which concerns you as an author is the format, a term which covers the shape, form and size of a book. The area of the page is obviously the determining factor in the physical dimensions of the book, and the various standard sizes may be described, beginning with this book, which is *crown octavo*, its pages being 7½ inches by 5 inches. That term is used because the page size, 7½ inches by 5 inches, is the size of a *crown* sheet of paper, which is 15 inches by 20 inches, folded into eight. Octavo, sometimes printed as 8vo, denotes the size of a sheet of paper when it is folded into eight.

If you check the measurement of these pages, you will find that each page is slightly less than 7½ inches by 5 inches, because, before binding, the book has been trimmed, so that a fraction has been sheared off the page area. Nearly all novels are *crown octavo*; but technical books may need a larger page area to accommodate illustrations, diagrams, graphs and tabular

matter, and also to reduce the number of pages and the ultimate bulk of the book by having a larger type area.

Demy octavo is a size larger than crown octavo, with a page which is $8\frac{3}{4}$ inches by $5\frac{5}{8}$ inches. (A demy sheet of paper is $17\frac{1}{2}$ inches by $22\frac{1}{2}$ inches.) *Royal* is still larger, having a page size of 10 inches by $6\frac{1}{4}$ inches. (A royal sheet is 20 inches by 25 inches.)

The length of a book in words and the nature of the illustrations, are the chief considerations in choosing the format. If you have highly detailed illustrations, either in the form of photographs, drawings, or maps, which cannot be greatly reduced in size, without seriously diminishing their clarity and value as illustrations, then your publisher may decide upon a large format such as *crown quarto*, with a paper size of 10 inches by $7\frac{1}{2}$ inches, twice the page area of this book. (Quarto, sometimes printed as 4to, denotes the size of a sheet when it is folded into four.) If your text is between 30,000 and 40,000 words long, crown quarto would give you a thin book, as more text is accommodated in the type area of each page.

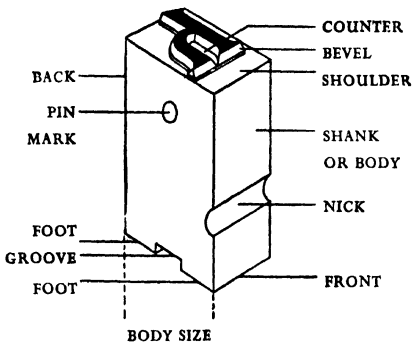
As the sheets of paper generally used for books are folded into eight and printed on both sides, it follows that a book is made up of a varying number of sections, each consisting of sixteen pages, and these sections are called *sheets*. On the first page of each sheet, there is a distinguishing character—usually a letter of the alphabet—called a signature, and sometimes the title of the book, or an abbreviation of it, accompanies the signature. Turn to page 7, and observe the letter B at the bottom of the page. That is the signature of the second sheet of this book, where the second section of

sixteen pages begins. The first begins with the half title, includes the prelims and six pages of Chapters I and II; as it is obviously identifiable as the beginning of the book, it has no signature letter A. If the prelims had not been numbered separately in Roman numerals, the second signature would have appeared on page 17, the third on page 33, and so on, after each section of 16 pages. At the end of a book, only half a sheet, eight pages, may be occupied by text, or only a quarter, four pages, with the last one or two pages left blank. It is technically impossible to use a smaller unit than four pages in printing a book. The paper linings of the front and back covers, which extend inwards to form an extra page before the half title and after the last of the numbered pages, are called the *end papers*, and are inserted when the book is bound. They are not part of or connected with the printed sheets, and are often different in quality and colour from the text paper.

The size and character of the type used for printing also affect the size and length of a book. The size of type is determined by a standard typographical measurement which is used in this country and the United States. Type sizes are calculated in "points," and a point is $\frac{1}{72}$nd of an inch, the measurement being taken from the top of a letter like h to the bottom of a letter like p. The line reached by the tops of letters like h, b, d, l and k, is called the ascender line; the line reached by the bottom of letters like p, y, and g, is the descender line; so the space between the ascender line and the descender line represents the size of the type, calculated in points. The tops of capital letters are on the ascender line. The accompanying diagram shows

how relatively simple these few technical facts are about type and its measurements.

(a) THE TYPE BODY



The 'beard' is that part of the type which stretches from the 'body line' of the letter to the bottom edge of the shoulder.

(b) THE TYPE FACE

1. Ascender line.
2. 'x'- line.
3. Body line.
4. Descender line.

Note: There may be a considerable variation of the 'x height' (i.e. the portion between 2 and 3) of a letter, within the same point size.

The Type Body and the Type Face. (Reproduced by courtesy of W. S. Cowell Ltd., from *A Handbook of Printing.*)

Small letters are known as "lower case," and capitals as "upper case," terms derived from the position of those letters in the case from which the compositor takes his pieces of type when he is setting it up. The terms persist, although hand-setting of type, once a universal practice, has been largely replaced by machine composition.

The type in which this book is set is 11-point Baskerville, with what is known as 2-point leading. That is to say, the space between the lines is 2 points in depth, and in the days of hand composition, would have been made by the insertion of a 2-point strip of lead between each line, but today, with mechanical composition, the

type face is cast on a larger type body, which allows for a 2-point lead below the descender line. The width and the height of the type area of a page are measured in what are called Pica ems, one Pica being equal to $\frac{1}{6}$th inch, or 12 points. The em is the normal measure used by printers.

I am not suggesting that anybody who writes a technical book should also be a master of typography, but knowledge of a few elementary facts about type-setting and printing may save an author a lot of time, trouble and worry, as well as saving time and money for the publisher, and unnecessary work for the printer.

The type sizes generally used for text were once given names, though this practice has been superseded by specifying the number of points. For example, 12-point type used to be called Pica: the 11-point type which you are reading on this page was called Small Pica.

Now we have changed down to a smaller size, 10 point, once called Long Primer, and the next sentence is set in a size one point smaller.

This is 9 point, once called Bourgeois. There is a still smaller size, as the next sentence demonstrates.

This is set in 8 point, formerly known as Brevier A lot of this would be difficult to read, particularly if it were set in a long line; but it is useful for footnotes But there is something still smaller

This is 7-point type, once called Minion, but seldom used today. Smaller still is the next example.

This sentence is set in 6-point type; very small, but useful for some types of footnotes, or marginal notes related to illustrations. It used to be called Nonpareil.

We have now returned to 11-point Baskerville, and before describing the different styles of type faces, the arrangement of the text in the type area on the page

should be mentioned. At the top of each left-hand page (verso), the title of the book is usually given; on the right-hand page (recto), the title of the chapter or section. The number may appear either at the top or the bottom of the page.

In a technical book, it is convenient to have the title of the chapter on each right-hand page, and where the chapter titles are long, they are condensed so that they go into one line. This book has running titles, with page numbers at the bottom.

Your text may be split up, because you want to emphasise or segregate or classify certain matters. You may want to have headings in the text, or marginal notes. The marginal note is both expensive and is sometimes untidy, and what is known as a cut-in note, which comes into the type area, is more satisfactory in appearance.

This is what a marginal note looks like

This is a cut-in note

A cut-in note involves what is known as "setting round," and a lot of "setting round" is costly; but the cut-in note is tidier than the marginal note, as you may see from this example.

Then there are shoulder heads and side heads and cross heads. Here they are:

THE TECHNICAL HITCH
(Shoulder head)

This is a separate line set full out.

The Technical Hitch. This is a side head, indented and continuous with the text and set in italics.

THE TECHNICAL HITCH
(Cross head)

All these devices tend to disrupt the page, and should be used only if they increase the clarity of what you are trying to say. Don't imagine that they increase legibility—they may even impair it by distracting the ever-wandering eye of the reader, who, I may again remind you, probably doesn't want to read what you've written.

Legibility is the first duty of type. You may think that legibility is something that happens naturally; and you may not have appreciated the reason why some books are a toil to read, however interesting they may be, while others never allow you to be conscious of the act of reading. There are simple, mechanical rules which guard the comfort of readers and are followed by all competent typographers.

The length of line in a type area is governed by the size of the type. If the line is too long, it will be difficult for the eye to follow it, and this tires the reader. A line which would be perfectly legible in 12-point type would be less easy and comfortable to read if it was set in the same length in 8 point. For the 11-point type on this page the length of line is $3\frac{1}{2}$ inches long. This could be extended to $3\frac{3}{4}$, 4, or $4\frac{1}{8}$ inches in length, but would not be quite so comfortable to read, and if extended to 5 inches, would begin to strain the eye.

There are two general classifications for type: Roman and italic. This page is set in Roman, *but these words are set in italics*. As its character suggests, the *italic*, or *cursive* type, began as an imitation of handwriting. It was

The ancestor of contemporary type faces. Lettering on a sculptured Roman Legionary Tablet, discovered in 1868 at Bridgness, near Carriden, Linlithgowshire. (From *The Past in the Present*, by Dr. Arthur Mitchell. Edinburgh, David Douglas, 1880.)

invented by Aldous Manutius, in Venice, in the latter part of the fifteenth century. Nearly all type faces have their italic version, and there are many hundreds of different type faces.

Most type faces are based on the Roman alphabet, the proportions of the capital letters being derived from the inscriptions cut on Roman monuments. The lettering on Trajan's column at Rome furnishes one of the best examples.

I am not proposing to enlarge upon the history of type design, though it may interest you to know that John Baskerville, who designed the type used in this

book, was an English inventor, whose versatile ability seems so astonishing in the present age of specialists. He was born in 1706, in Worcestershire; at the age of twenty, he became a writing master at Birmingham, and developed great skill in cutting inscriptions in stone. During what might be called his "Birmingham period," he invented some improved processes for japanning, made a large fortune from them, and in 1750 started his experiments in type founding, and set up a printing house in 1757. A year later, he was appointed printer to Cambridge University. The Baskerville Press became famous, and its founder was one of the earliest members of the Society of Arts.

The best way of illustrating the differences between type faces is to set the same paragraph in several styles. The sentences which follow are from an essay on "The Sense of Values," in Clive Bell's book, *Civilisation.*[1] Here they are set in 11-point Baskerville like the rest of this book:

"The grammarian is at once superb and slightly ridiculous; but what makes him ridiculous is not his disregard of common values but a maniacal concentration on one good thing to the neglect of all others. The specialist is never completely civilised. The eighteenth century could be as unpractical as the Renaissance. Amongst the lower intellectual orders it is still fashionable to reproach that charming age with having devoted itself to such purely speculative sciences as mathematics and geometry, rather than to the more useful Biology and Chemistry."

[1] *Civilisation,* by Clive Bell (Chatto & Windus, Phoenix Library edition, 1932); Section IV, pp. 96–7.

12-point Caslon Old Face.

"The grammarian is at once superb and slightly ridiculous; but what makes him ridiculous is not his disregard of common values but a maniacal concentration on one good thing to the neglect of all others. The specialist is never completely civilised. The eighteenth century could be as unpractical as the Renaissance. Amongst the lower intellectual orders it is still fashionable to reproach that charming age with having devoted itself to such purely speculative sciences as mathematics and geometry, rather than to the more useful Biology and Chemistry."

11-point Plantin.

"The grammarian is at once superb and slightly ridiculous; but what makes him ridiculous is not his disregard of common values but a maniacal concentration on one good thing to the neglect of all others. The specialist is never completely civilised. The eighteenth century could be as unpractical as the Renaissance. Amongst the lower intellectual orders it is still fashionable to reproach that charming age with having devoted itself to such purely speculative sciences as mathematics and geometry, rather than to the more useful Biology and Chemistry."

11-point Garamond.

"The grammarian is at once superb and slightly ridiculous; but what makes him ridiculous is not his disregard of common values but a maniacal concentration on one good thing to the neglect of all others. The specialist is never completely civilised. The eighteenth century could be as unpractical as the Renaissance. Amongst the lower intellectual orders it is still fashionable to reproach that charming age with having devoted itself to such purely speculative sciences as mathematics and geometry, rather than to the more useful Biology and Chemistry."

11-point Perpetua.

"The grammarian is at once superb and slightly ridiculous; but what makes him ridiculous is not his disregard of common values but a maniacal concentration on one good thing to the neglect of all others. The specialist is never completely civilised. The eighteenth century could be as unpractical as the Renaissance. Amongst the lower intellectual orders it is still fashionable to reproach that charming age with having devoted itself to such purely speculative sciences as mathematics and geometry, rather than to the more useful Biology and Chemistry."

11-point Times Roman.

"The grammarian is at once superb and slightly ridiculous; but what makes him ridiculous is not his disregard of common values but a maniacal concentration on one good thing to the neglect of all others. The specialist is never completely civilised. The eighteenth century could be as unpractical as the Renaissance. Amongst the lower intellectual orders it is still fashionable to reproach that charming age with having devoted itself to such purely speculative sciences as mathematics and geometry, rather than to the more useful Biology and Chemistry."

Those six type styles, Baskerville, Caslon, Plantin, Garamond, Perpetua, and Times Roman, are all based on the forms of the Roman alphabet. Yet another example of that paragraph should be given, set in what is known as a sans serif type. Serifs are the short cross-lines at the ends of Roman letters: for example at the base and at each end of the top of the letter T, and at the base and top of the vertical members of the letter H. When these cross-lines are omitted, the simplified form is sometimes known as a block letter, but it is generally called a sans serif letter, thus: T H. Eric Gill designed one of the best of the sans serif type faces now in use,

and it is named after him: Gill Sans. Here is the quotation from Clive Bell, set in 10-point Gill Sans:

"The grammarian is at once superb and slightly ridiculous; but what makes him ridiculous is not his disregard of common values but a maniacal concentration on one good thing to the neglect of all others. The specialist is never completely civilised. The eighteenth century could be as unpractical as the Renaissance. Amongst the lower intellectual orders it is still fashionable to reproach that charming age with having devoted itself to such purely speculative sciences as mathematics and geometry, rather than to the more useful Biology and Chemistry."

While this type is admirable for displayed lines, its use for pages of text would be exasperating.

Because contemporary sans serif types have a clean, sharp appearance, some people contend that they correspond in character to the modern movement in architectural and industrial design, and that books and articles printed in them attain an ultra-modern excellence. This contention has been finally disposed of by one of our greatest living typographers, Sir Francis Meynell, who has said that only typographers who were ideologists rather than printers have despised the old canons of legibility.[1]

A technical book is a tool. If it is illegible, it is a blunt one.

[1] "National Design in Printing," by Sir Francis Meynell. Lecture delivered to the Design and Industries Association, April 8, 1943.

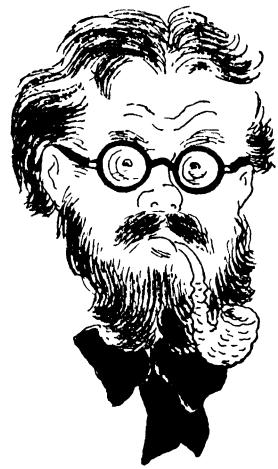
CHAPTER VII

BOOK PRODUCTION, PAPER, BLOCKS AND ILLUSTRATIONS

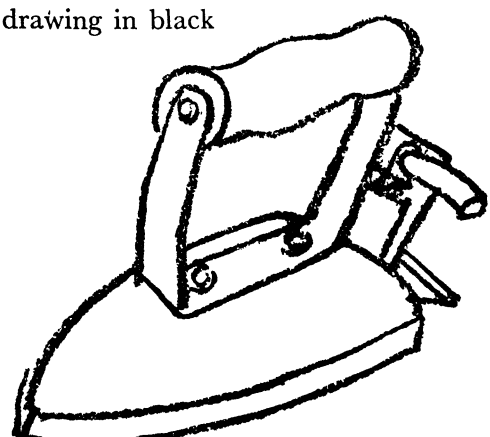
PAPERS used for books are made chiefly from esparto grass, which grows in Spain and North Africa, and wood pulp. During the Second World War when esparto grass could not be imported, straw was substituted. Hand-made and mould-made papers are made from cotton and linen rags; but these materials are too expensive for the commercial production of paper. Most books are, like this one, printed on antique paper; which is smooth but neither shiny nor dazzling. The four plates at the end of the book are on art paper, which has a glossy surface because it is coated with china clay, and this highly glazed surface allows reproductions of photographs and delicate pencil or wash drawings to be printed with the maximum amount of clarity and sharpness of detail. (Art paper is sometimes referred to as *coated* paper.) As books are generally printed by letterpress, that is from raised type and blocks, the nature of the blocks affects the choice of paper, and the nature of the illustrations determines the kind of block that should be used to give the best reproduction in black and white or in colour.

There are two principal types of block. There is the line block, which is a plate of zinc or copper, produced chemically and photographically to record, in reverse,

ready for printing, a line drawing. This is a line block made from a pen and ink drawing:



This is also a line block, made from a drawing in black chalk:



The other type of block is the half-tone. This is also a plate of zinc or copper, whereon a toned picture is reproduced photographically and is broken up into a

series of minute dots by means of a finely ruled screen. Turn to Plate I at the end of the book, which shows four reproductions of the same subject in four different screens. The finest screen, which has 150 dots to the square inch, is shown on the upper left-hand part of the plate, and the dots can only be detected by exceptionally good eyesight, though a magnifying glass shows them clearly. On the progressively coarser screens, 120, 100 and 65, they are immediately apparent.

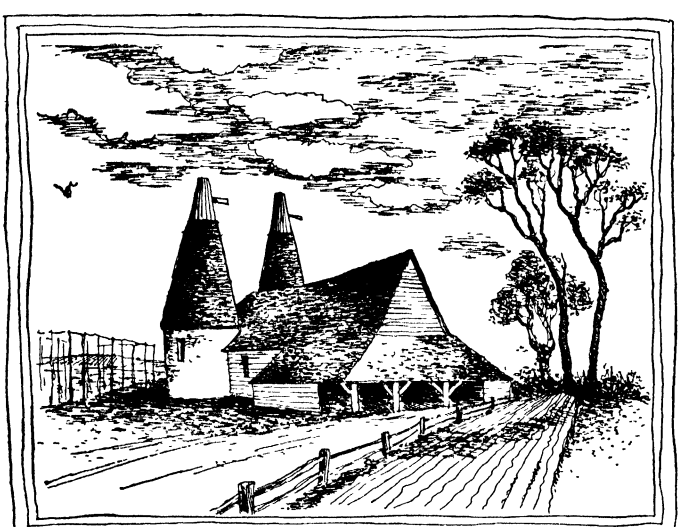
It is possible to have combined line and half-tone blocks, and an example is given on Plate II at the end of the book. In the subject shown on that plate, the best use of both processes is made.

Colour blocks may be in line or half-tone, or in combinations of both. In Chapter X the coloured illustrations are in line, with what are called tint blocks used for printing the background colours. Turn to page 145, where a three-colour block is used, showing how the passport application form might be redesigned. This consists of a tinted block for the yellow; the red lettering is overprinted on this, and finally the black. With colour printing, the exact placing of one colour upon another is known as "register," and when a coloured illustration is "out of register," the results can be deplorable, even alarming.

There are other processes for reproducing illustrations; for example, photogravure, but this is only economic when used for printing large numbers of a book, because a rotary machine is employed, which is costly on small runs. Then there is the offset process, which is really a form of lithography. The subject to be reproduced is printed, in reverse, on to an indiarubber

blanket which is attached round the cylinder of a rotary press; and the image is transmitted from this rubber-covered cylinder to the paper. Again, this process is only used for long runs, and for reproducing large editions of some existing book with its various illustrations and diagrams.

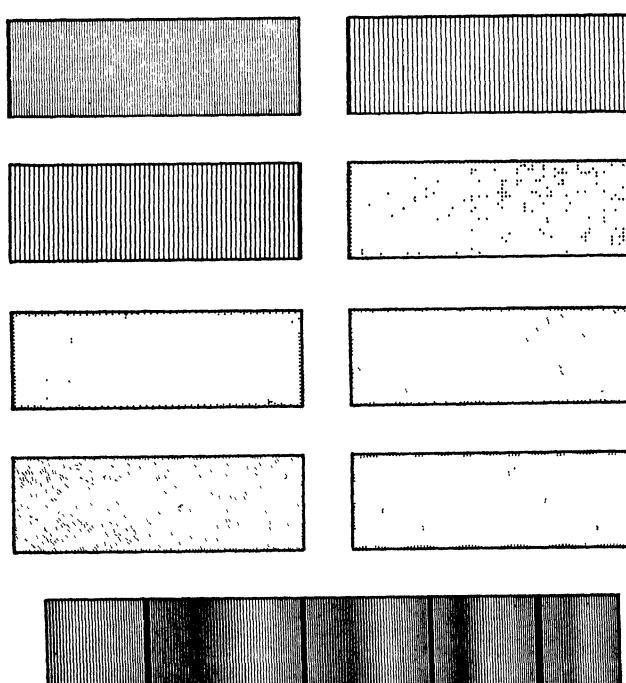
Here I am dealing only with the reproduction of illustrations by the line and half-tone process. The simplest way of showing the different effects of these processes is to treat the same subject in a variety of ways, each reproduced by the most appropriate methods. Lionel Allston has drawn four variations of a country scene. Here is his pen and ink drawing, reproduced by a line block.

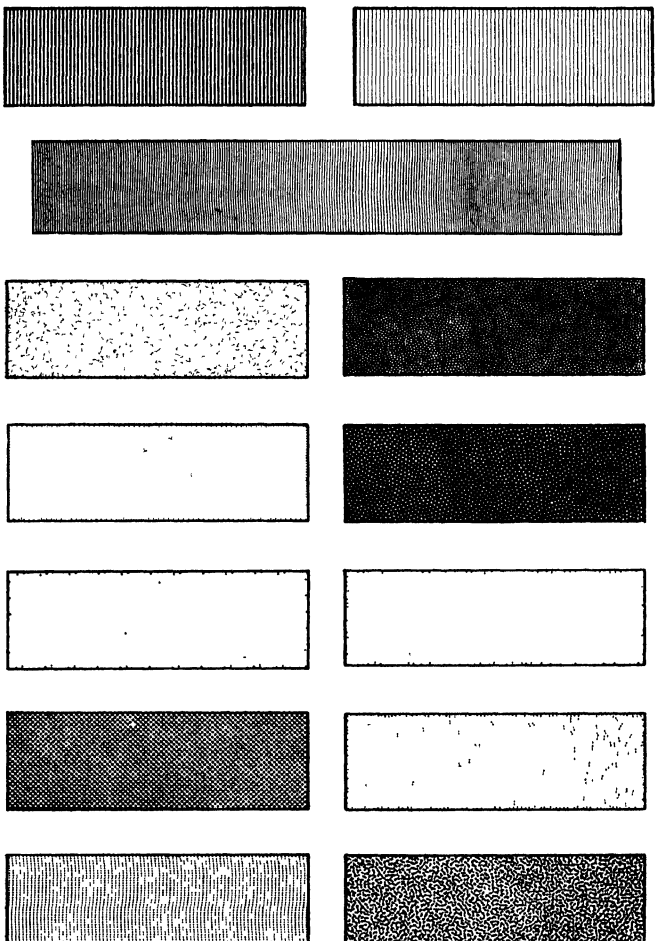


He did the same drawing in pencil and in wash. Turn to Plate III at the end of the book: on the upper

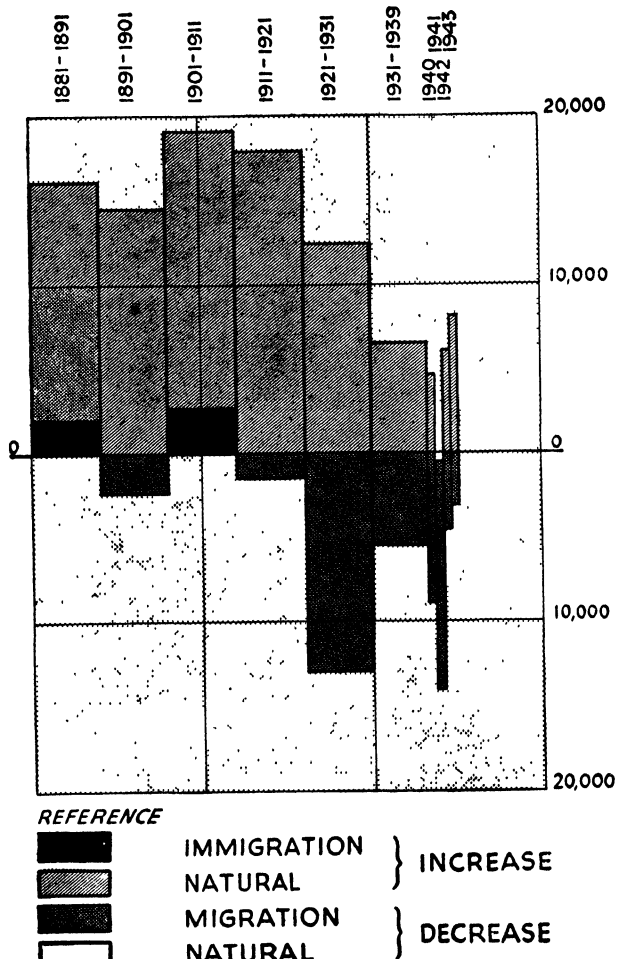
part of it there is a half-tone reproduction of Allston's pencil drawing, and below his wash drawing is reproduced in half-tone. For both blocks 150 screen has been used. There are other ways of reproducing shaded effects in a drawing without using the half-tone process. There are mechanical tints, which are known as Ben Day tints, which may be applied to line blocks to give both tonal or colour effects.

A range of these Ben Day tints, supplied by a firm of blockmakers, Craske, Vaus & Crampton Ltd., is shown below and on the opposite page.



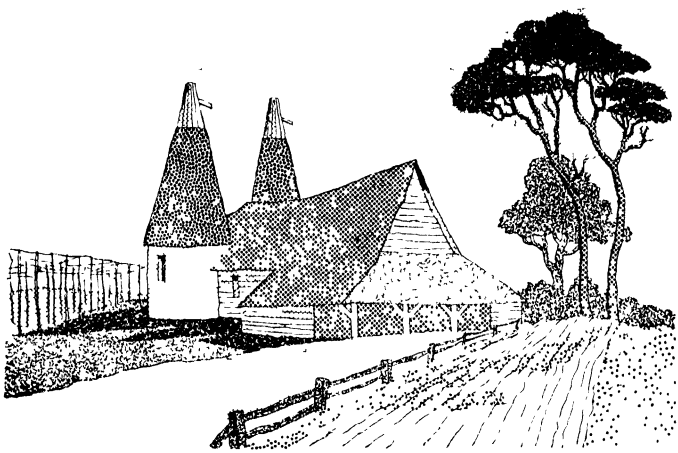


BEN DAY TINTS.—The tints shown above and on the opposite page are supplied by Craske, Vaus & Crampton Ltd. Applications are illustrated on pages 90 and 91.



The use of mechanical tints on diagrams and charts is suggested by this illustration, showing fluctuations of population. (From the outline plan for the County Borough of Birkenhead, reproduced by permission of the Council.)

We can now see how these tints can be used in shading Allston's drawing. Here it is:



Compare this with the version on page 87. Instead of drawing his shading, Allston has made a pen outline only, indicating the tints that he wanted the block-maker to use on an overlay of tracing paper on which he marked the areas to be occupied by the different tints, which he specified by number.

Ben Day tints may be used effectively on diagrams. The example opposite uses three of these tints to show the fluctuations of population in the County Borough of Birkenhead. (It is reproduced by permission from the outline plan for the County Borough of Birkenhead, which was prepared for the Council by Professor Sir Charles Reilly and N. J. Aslan.)

A Ben Day tint plate is used in the coloured illustrations on pages 137 and 149, which suggest revisions for forms issued by the Board of Trade and the Ministry of Works.

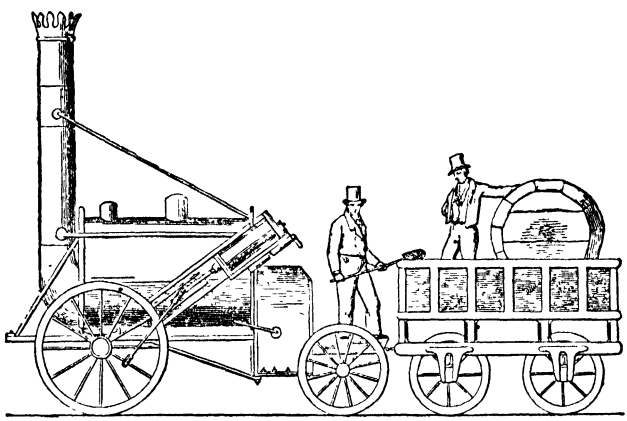
The line-block process may be used to reproduce any form of illustration which has firm, clear lines. Two examples are given on pages 111 and 112. The first is a section of an old print made about 1700, showing part of the river front near Somerset House, London. The other reproduces an old print of Temple Bar, dated 1755.

A more difficult subject appears on page 114. It is from Pugin's book, *The True Principles of Pointed or Christian Architecture*, published in 1841. Pugin was one of the greatest architectural draughtsmen of the nineteenth century, and the delicacy of his work has been preserved in this line block, although the original illustration in his book was reproduced from a copper plate. A less successful example of the use of the line-block process to reproduce an engraving occupies page 115. This is one of the plates from Gwilt's translation of Vitruvius, published in 1826, and the fine lines of the engraving have lost their graduated clarity and have tended to merge and to become patchy. The process has failed here, and this example is included to show some of its limitations.

Authors and publishers in the nineteenth century were diligent in the production of technical books of all kinds; the standards of illustrations were exacting, and illustrators were extremely competent, and some of them inherited the elegant conventions of eighteenth-century draughtsmen. The rapid growth of engineering

in all its branches made fresh, unusual and continuous demands upon draughtsmen.

The simple diagrammatic type of illustration was much in favour. Here is an early representation of Stephenson's *Rocket*:

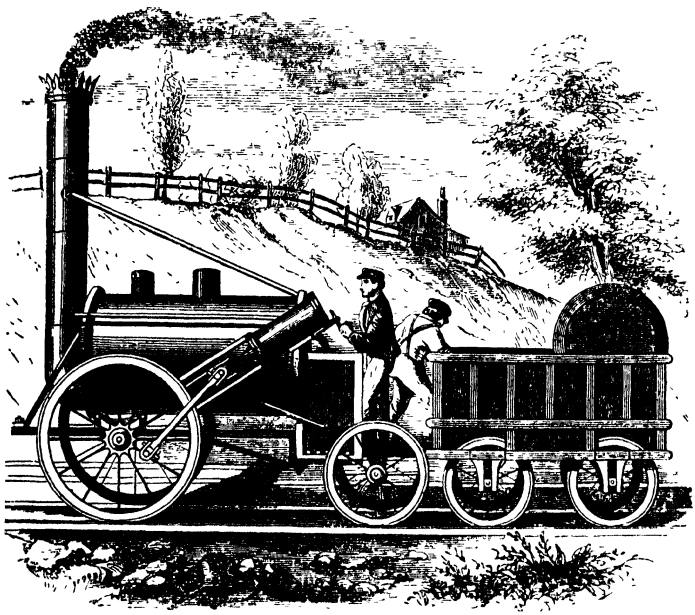


The drawing is as conventional as the costume of the engineers in charge of the locomotive, and is one of the illustrations included in *Our Iron Roads*, by Frederick S. Williams, published in 1852. It retains the simple characteristics of early nineteenth-century technical drawings.

A more lively realism was gradually introduced, and on page 94 is another representation of the *Rocket*, from Volume III of *The Lives of the Engineers*, by Samuel Smiles, which was first published in 1868.

Today bold, dramatic freedom of treatment characterises many of the illustrations in technical works,

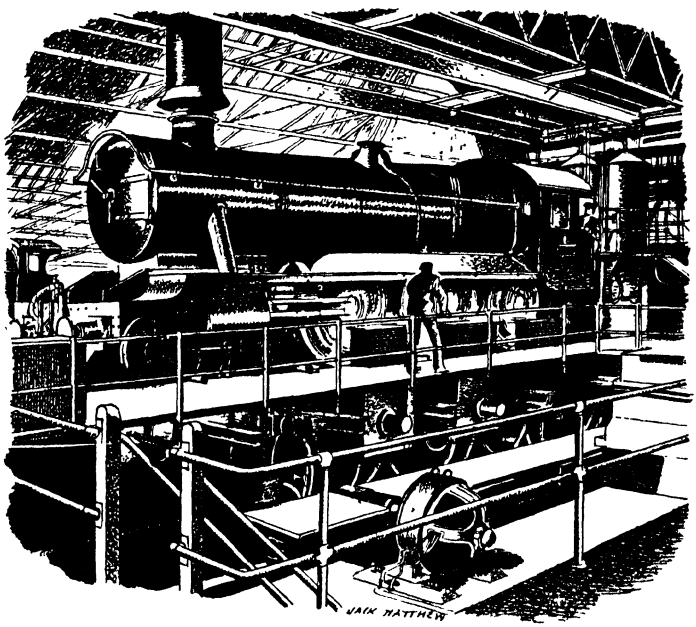
particularly in books on technical subjects which are intended for popular consumption. This quality is exemplified by Jack Matthew's drawing of a county class Great Western Railway locomotive, under test at



Swindon, shown opposite. It has technical accuracy, plus imagination and a vigorous treatment of the subject.

The sensitive realism practised by eighteenth- and nineteenth-century draughtsmen is apparent in the illustrations on pages 108 and 109. On the latter is Winstanley's lighthouse, from Volume II of *The Lives of the Engineers*, by Samuel Smiles. It shows the distinctive

elegance of an early eighteenth-century drawing, and is reproduced from an old print. The drawing on page 108, showing a section through the Bell Rock lighthouse, has



(This illustration is reproduced by permission from *Next Station*, by Christian Barman, published by George Allen & Unwin Ltd., 1947.)

a comparable delicacy of finish. Even in this sectional drawing, the draughtsman has attempted to retain an air of realism; he was fearful, as indeed were many technical authors, of unfettering his imagination when he wanted to dramatise some point. In these labour-saving days, when most people demand that all things

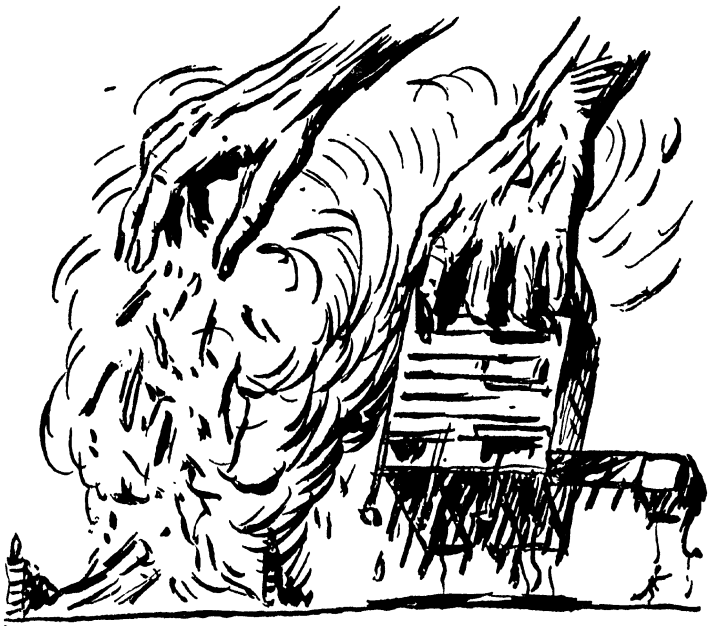
shall be made easy for them and that the arduousness shall be removed from study, the dramatisation of illustrations in technical books is considered not only legitimate, but almost essential.

I make no excuse for repeating here what I said in Chapter II: "To reject short cuts to the minds of the people you want to reach is sheer obscurantism: don't use words if diagrams or pictures could do a better job." It is far better to use a telling, dramatic illustration to mark an idea indelibly upon the memories of your readers than to indulge in exhortation. In Maxwell Fry's book, *Fine Building*, he emphasises the spectacular difference between Georgian building in brick and mortar, and contemporary building in steel and concrete, by a brief description, vividly illustrated. He says: "Imagine two buildings, one a Georgian building of bricks and timber, with a pitched tile roof, sitting stoutly and firmly on the ground: the other a steel-framed building with ample glass windows, flat roof, and ground floor perhaps only partly built over: the whole, light, rigid and a little insubstantial to some eyes.

"Now imagine that from the sky two giant hands descend, and grasping both buildings, lift them into the air. What happens? The first, built out of many little parts loosely bound to each other, collapses in a cloud of dust and flying timbers; whilst the second, being a rigid cage, shakes off its thin covering of glass and brick, and rises into the air, trailing a mess of pipes and cables, unbroken and undeformed." [1]

[1] *Fine Building*, by Maxwell Fry (Faber & Faber Ltd., 1944); Chapter V, p. 125.

He follows that description with this drawing:

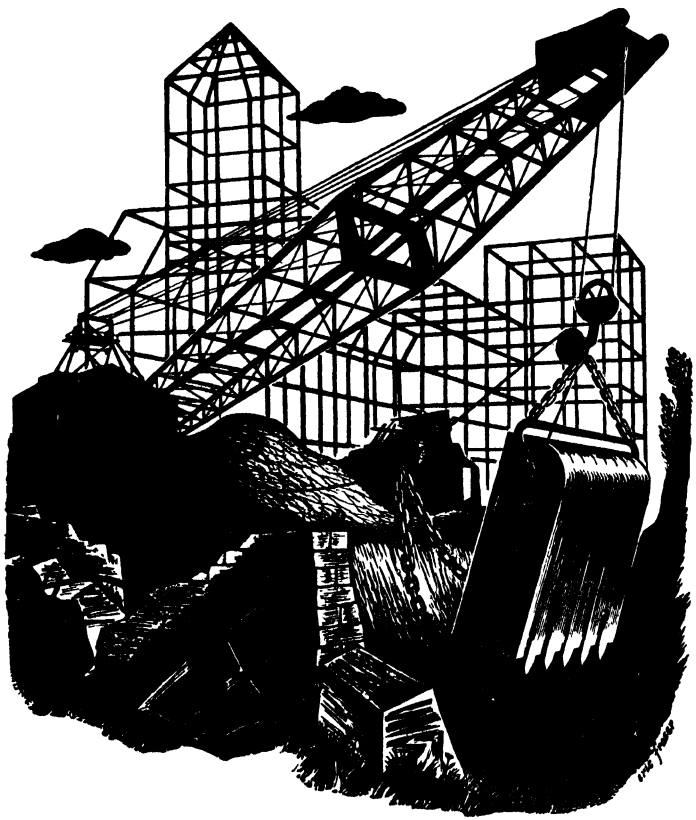


From *Fine Building*, by Maxwell Fry, reproduced by permission of the author and Faber & Faber Ltd., the publishers.

An equally vigorous treatment, very different in character, is shown on the next page. This is a line block made from a scraperboard drawing by Eric Fraser, used in one of the advertisements of the Northern Aluminium Company Ltd., and reproduced here by their permission.

Scraperboard is a reverse technique. The board used is chalk-coated, with a smooth, wax-like finish. This is

blacked over, according to the character of the drawing, and the artist uses various tools to scrape away the blackened surface. This is usually done in the form of lines, following the planes of the object that is being illustrated. Gradations of tone are achieved by varying



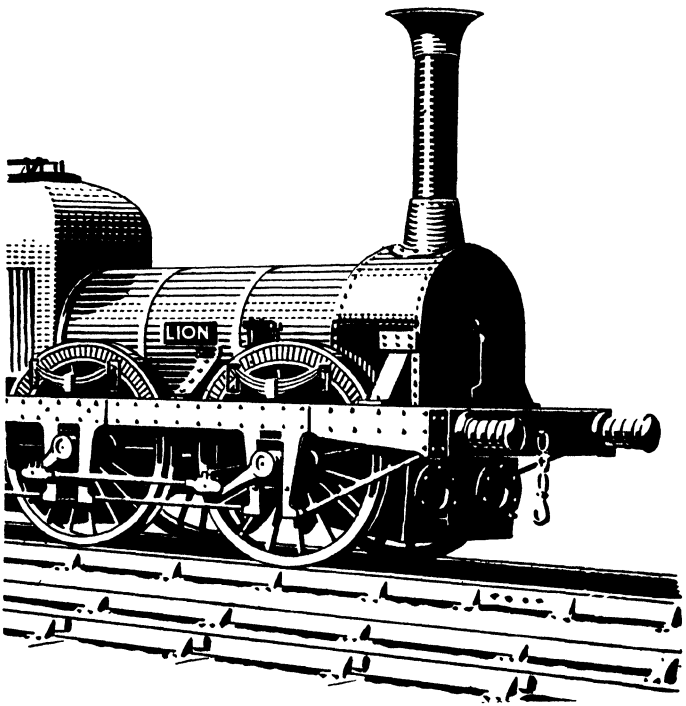
A scraperboard drawing by Eric Fraser of an industrial subject, made for the Northern Aluminium Company Ltd., and reproduced by their permission.

the thickness of the lines. Sharp, needle-pointed tools are used, or specially sharpened knives. Many artists use an ordinary penknife, sharpened to suit the work. The effect of scraping away the black surface is to leave the white chalk exposed; and experienced scraperboard artists work very lightly, so that the thin chalk surface is not entirely removed. This allows alterations to be made, because mistakes can be blackened over and worked on again.

One of the great advantages of scraperboard drawings for reproduction by the line process, is that where white lines cross, there is no tendency for them to clog when the drawing is reduced for reproduction. In other line techniques, where the lines are black on white, the lines tend to thicken, and where cross-hatching is used, or lines run close together, the clarity of the drawing is impaired by clogging. Scraperboard drawing is useful for technical illustrations, because it retains sharpness of detail in reproduction.

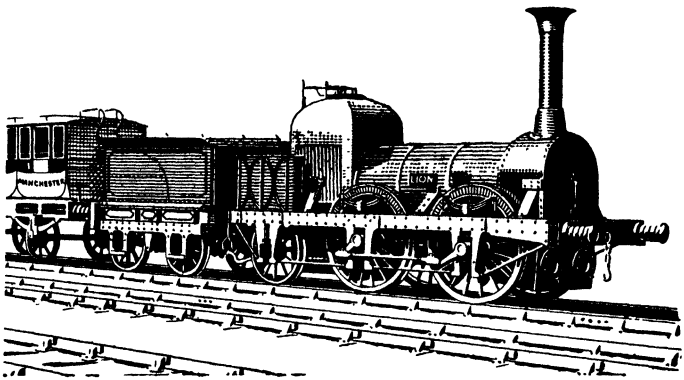
On page 100, there is a line block of part of a scraperboard drawing, which reproduces a drawing without reduction. The subject is an early nineteenth-century locomotive, the *Lion*, and the drawing is made from a photograph, the material being supplied by the London, Midland and Scottish Railway. On page 101, three progressive reductions of this subject show how clear the scraperboard technique remains.

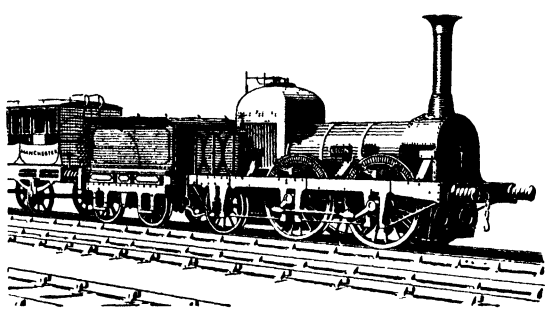
Excessive reduction of any material for illustration should be avoided, not only because of the clogging which may occur when it is printed, and the loss of detail, but because considerable reduction is expensive, and increases the production costs of a book.

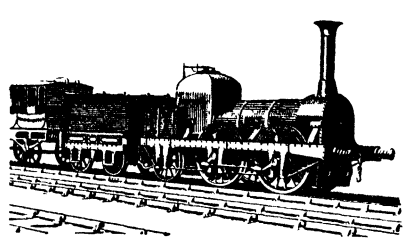


Part of a scraperboard drawing, made from a photograph of an early locomotive, the *Lion*. This is the actual size of the drawing. Compare this with the progressive reductions on the opposite page.

(Reproduced from a photograph supplied by the London, Midland and Scottish Railway.)





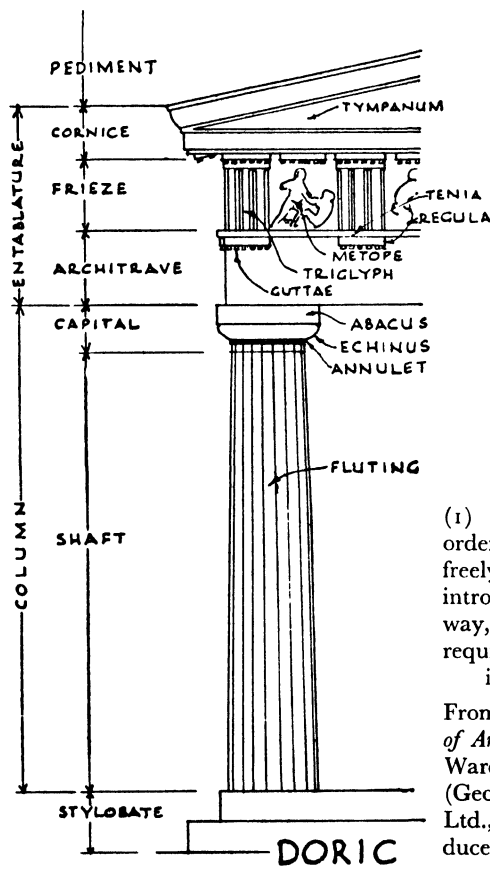


Three progressive reductions of the scraperboard drawing of the *Lion*, shown full size on page 100. Even in the smallest version, the clarity of the original drawing has been preserved.

One more example of the possibilities of the scraperboard technique should be given.

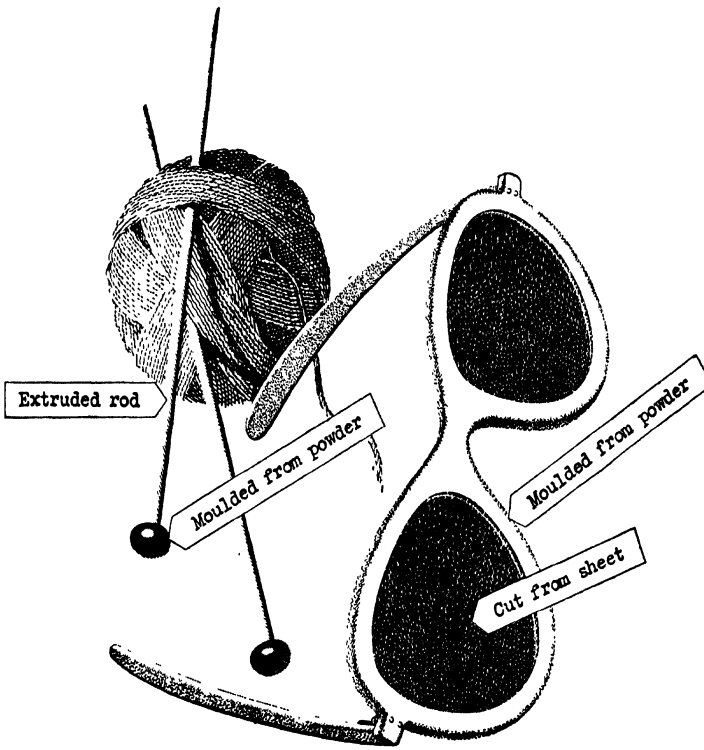
Another composition by Eric Fraser, in scraperboard, designed for the Northern Aluminium Company Ltd., and used in one of the company's advertisements. This shows the delicacy of treatment made possible by this technique of drawing for reproduction by the line-block process. (See page 98.)

Technical drawings and diagrams often demand, in addition to captions, the introduction of type or lettering, into the body of the drawing. There should be uniformity in the style of the lettering used. Four different styles are shown below and on the next three pages.



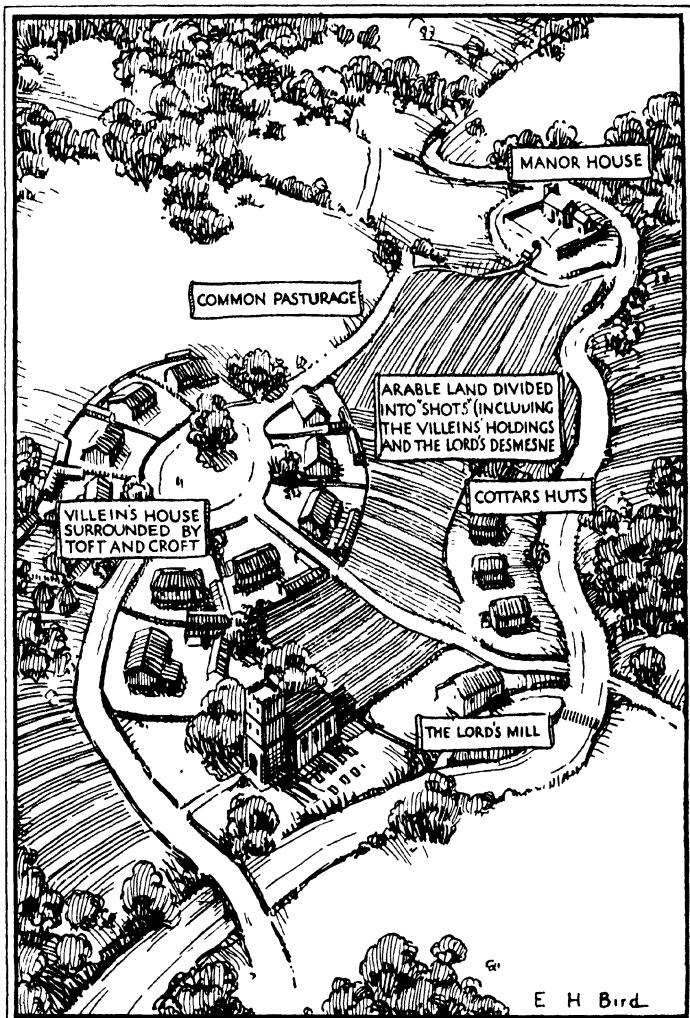
(1) The Greek Doric order. The lettering is freely drawn, but it is introduced in an orderly way, and fulfils the first requirement of all lettering—legibility.

From *A Short Dictionary of Architecture*, by Dora Ware and Betty Beatty (George Allen & Unwin Ltd., 1946). Reproduced by permission of the authors.

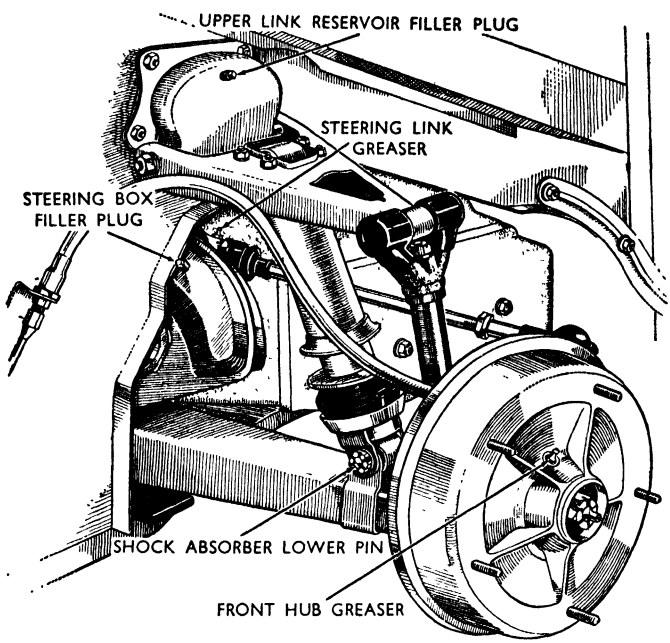


(2) The lettering here is tagged on to the different subjects in the drawing, and typewriter type is used. These captions have been typed out and pasted into the drawing. This is a scraperboard drawing, showing the basic forms in which plastics are available for working.

From *Plastics and Industrial Design*, by John Gloag (George Allen & Unwin Ltd.). The drawing is reproduced by courtesy of Halex Ltd.



(3) In this pictorial plan of a feudal manor, the lettering has been inserted on scrolls, and this method of labelling, when it is kept under control, is clear and decorative without being fussy.



(4) An excellent example of a line drawing of a complicated technical subject, with descriptive lines of Gill Sans lettering. From the instruction book of the Javelin car, issued by Jowetts Ltd., and reproduced by permission.

Half-tone blocks can faithfully reproduce good photographs. The exacting subject on Plate IV includes foliage and the rather complex detail of a wooden building; and the half-tone block has done an excellent job, as it always can *if* the photograph is a good one. In choosing photographic illustrations, insist always on good photography. A bad photograph that has to be retouched makes a bad illustration. Retouching should always be avoided: the camera should do the job

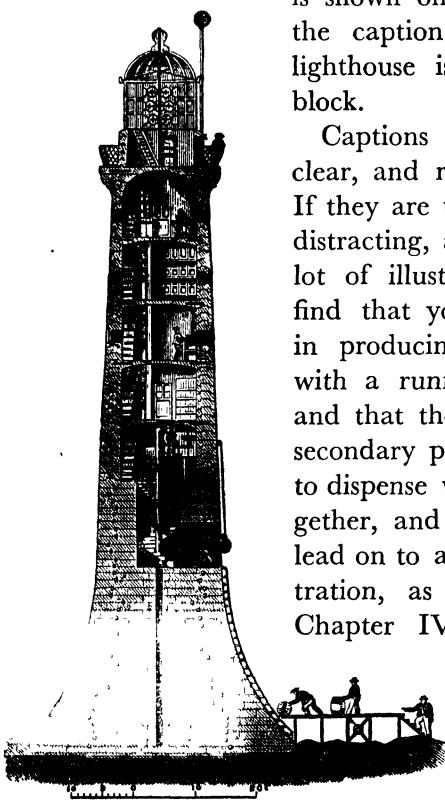
properly in the first place—if it doesn't then it has been used badly. The camera, it is said, cannot lie. It can sometimes; but when a photograph is retouched it lies unmistakably and often offensively.

The block on Plate IV is "bled off" at the top and left-hand side, the right-hand side of the block disappearing in the binding. When illustrations are taken beyond the type area and over the edge of the page, the technical term used is "bleeding." The practice is comparatively modern, and was, a few years ago, regarded as an undesirable innovation: certainly it is a costly one, but it does secure a greater area for illustrations on a small page. Generally speaking, it is undesirable to bleed off illustrations at the top, bottom and sides of a page, because this involves the printer in technical difficulties, though to bleed off at the top *or* bottom and one side of a page is permissible.

With three-colour blocks, either line or half-tone, the three primary colours, yellow, red and blue, are printed in that order: yellow first, then red on top of it, then the blue on top of the red and yellow. Greater depth and definition are gained when a fourth printing, black, is used, and this is always the last to be applied.

The placing of illustrations on a page should claim the author's attention; for he may expect all kinds of impossible and expensive things, and be disappointed when they are adroitly avoided by the publisher's production department. It is desirable that all the illustrations should be arranged horizontally on a page, and not vertically, for the reader should not be compelled to turn the book sideways to see the illustrations. Setting round should be avoided: there is an example

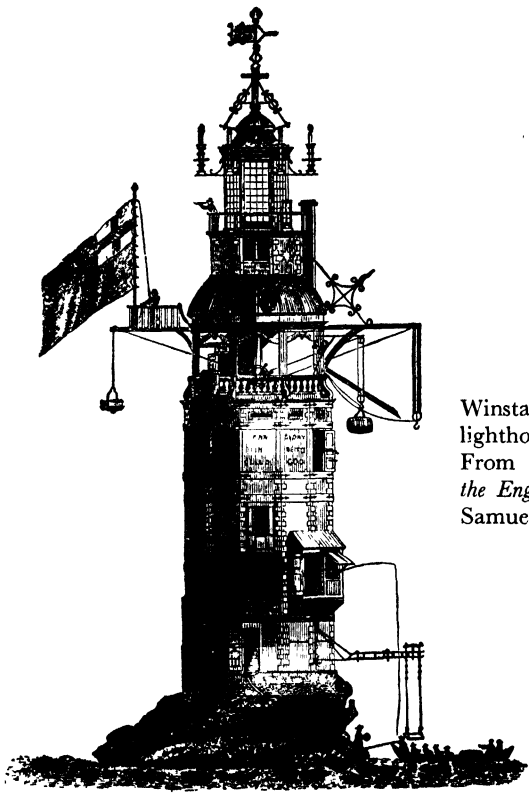
of it on this page, where the Bell Rock lighthouse is shown. Another use of the space beside an illustration is shown on page 109, where the caption for Winstanley's lighthouse is set beside the block.



A section through the Bell Rock lighthouse. From *The Lives of the Engineers*, by Samuel Smiles.

Captions should be short, clear, and related to the text. If they are too long, they are distracting, and if you have a lot of illustrations, you may find that you have succeeded in producing a picture book with a running commentary, and that the text has taken a secondary place. It is possible to dispense with captions altogether, and to make the text lead on to a diagram or illustration, as I have done in Chapter IV and occasionally in the present chapter. Finally, don't ask for captions to be set in italics: a smaller size of the type face that is used for the text is best. Italics should be used chiefly for emphasis, not for contrast, though they are useful in an index to differentiate references.

In giving these elementary facts about paper, blocks, illustrations and captions, I have deliberately avoided



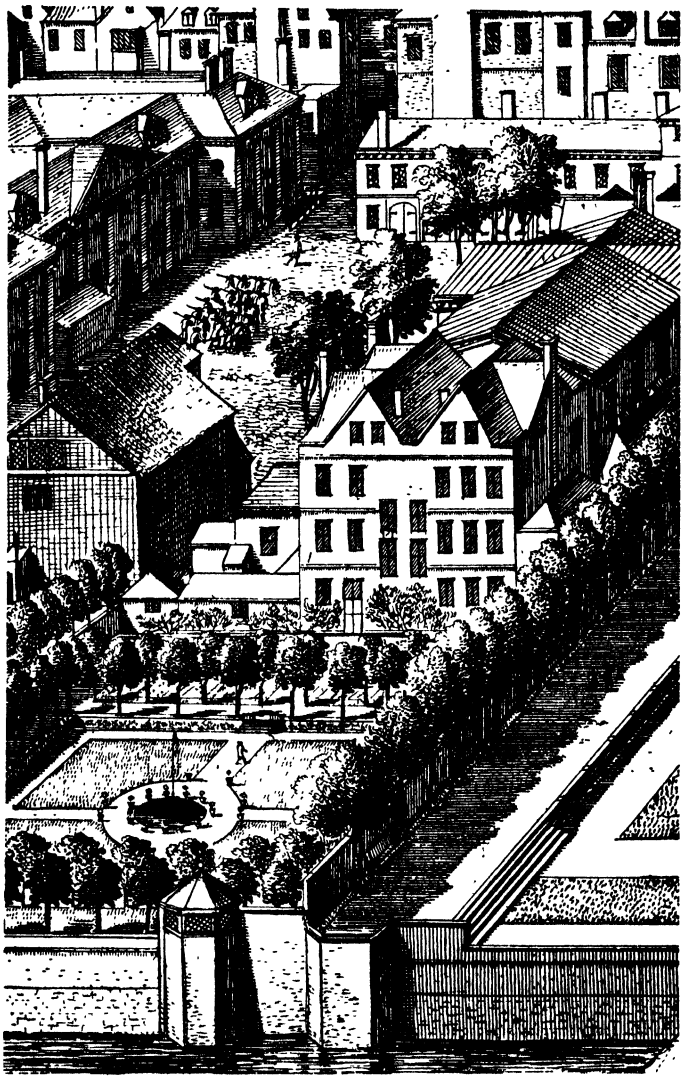
Winstanley's lighthouse. From *The Lives of the Engineers*, by Samuel Smiles.

details. It is easy to get your mind cluttered up with unnecessary technicalities, and I have mentioned only matters that should be of direct help to the author of a technical book who wants to use illustrations. Don't, on the strength of these few words, attempt to dictate a production policy to your publisher. Remember Clause

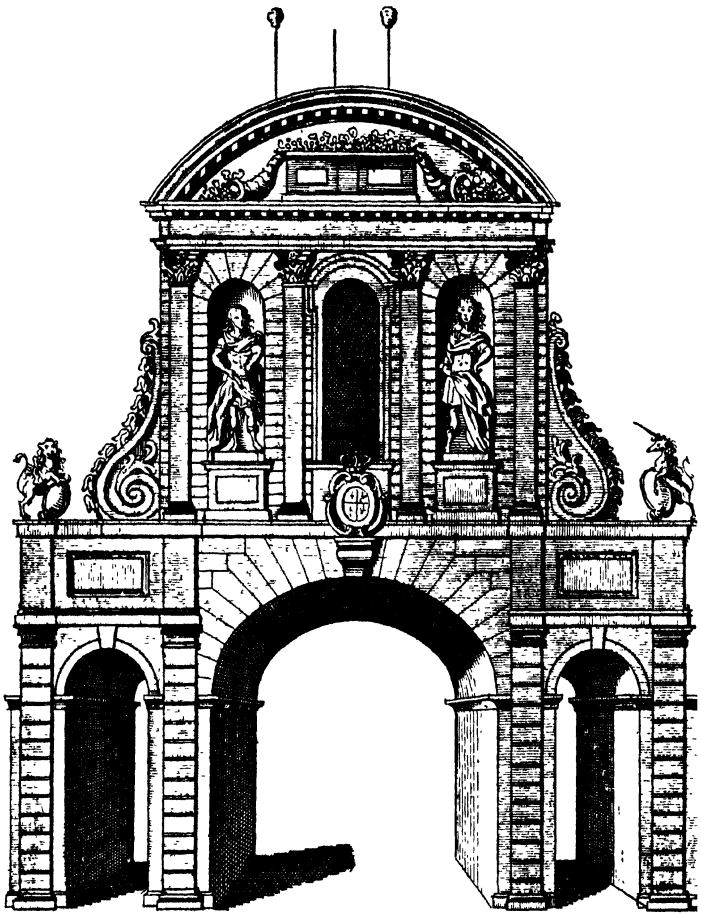
3 in the agreement that appears in Chapter IV, which leaves to the sole discretion of the publishers (who, after all, are footing the bill for producing the book) all details regarding the "manner of production, jackets, embellishments, and so forth." No publisher with any pretensions to intelligence resents suggestions; even if a suggestion is unpractical, it may start a train of thought in his own mind that leads to something which *is* practical.

Two matters on which an author may legitimately make suggestions are the binding and the jacket or dust cover.

In the spacious pre-war days of publishing, when publishers, authors, printers and binders could get what they wanted instead of being compelled to want what they could get, there was a big choice of binding cloths. In normal times the author's preferences can usually be accommodated, unless he happens to be contributing a book to a series, which is bound in a uniform fashion. On inexpensive books, the lettering on the binding is generally confined to the spine, where the title, the author's name, and the publisher's name appear. During the war, because of the reduced bulk of books, the lettering on the spine was usually arranged vertically, as there was insufficient space for it to be set horizontally. There is no inherent objection to this, though, both as an author and a user of books, I could wish that publishers would agree among themselves to standardise the direction in which these vertical titles run. It causes maddening confusion in a bookcase to have some titles reading from top to bottom, and others from bottom to top.



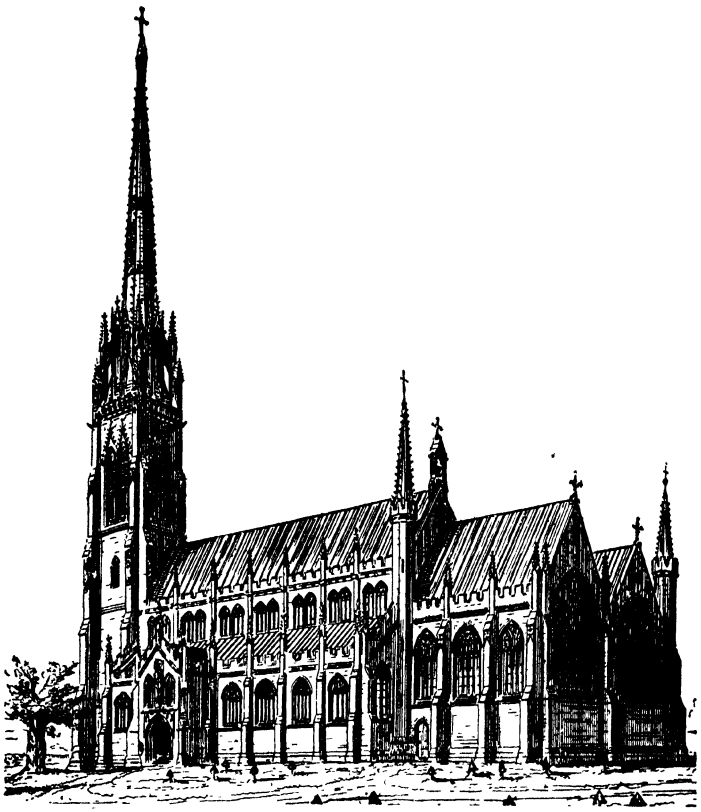
Part of an old print of Somerset House and the adjacent river front, London. Published about 1700.



Drawing of Temple Bar included on a plan of Farringdon Ward without, with its divisions into parishes, published in 1755.

The jacket of a book displays, not only on the spine and on the front the title and names of the author and publisher, but also carries a "blurb"—a piece of advertising material that describes the book and commends the author to the potential purchaser. It should not be forgotten that the whole jacket is a piece of advertising material; and the publisher is perfectly justified in using the back and sometimes one of its inside flaps to advertise other books in his list. Some authors resent this; and their resentment is unreasonable. They should remember that their book is often advertised on the jackets of other books issued by the same publishing house, and that a publisher who neglected to use this jacket space to the best advantage of his wares, would be neglecting his own commercial interests and those of his authors.

When you have two or three books to your credit, issued by the same publisher, it is reasonable to expect that they should be mentioned prominently on the jacket of your latest book. (If there is a page or two to spare at the end of a book, after the index, they may be used for advertising either your own or other books.) Some authors are gratified to see extracts from reviews of their previous works reproduced on the jackets of their books; though it is doubtful whether a potential buyer of the book is warmed to the same glow of enthusiasm by a couple of disjointed sentences quoted out of their context, which inform him that ". . . the author is familiar with his subject . . . the book is not without interest." Unless extracts from reviews specifically refer to the quality and contents of a technical book, and unless they are quoted from



A line-block reproduction from a copper-plate engraving of a drawing by A. Welby Pugin, and included in his book, *The True Principles of Pointed or Christian Architecture.*

responsible and established journals, they should not be used for advertisement purposes. Genial but non-committal statements are useless. They should never be included because somebody thinks "Well, after all, they can do no harm." If they are so insipid that they evoke such a spineless conclusion, they probably *are* harmful.

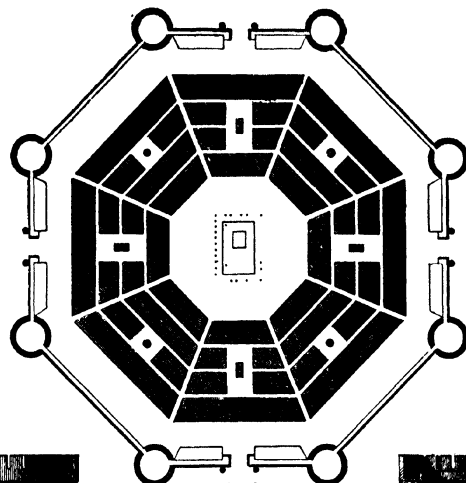


Fig 1

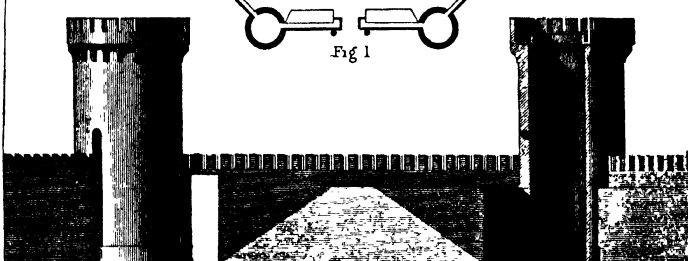


Fig 3.

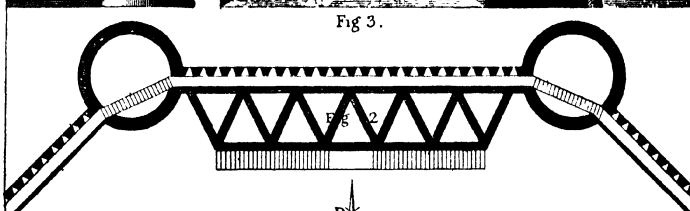


Fig 2

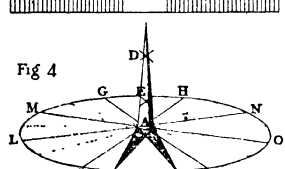


Fig 4

J Gwilt

J Hoffs se

A line-block reproduction of one of the engraved plates in Joseph Gwilt's translation of Vitruvius, published in 1826.

CHAPTER VIII

THE PROOFS AND THE INDEX

WHEN you have delivered your complete material to the publisher, after an interval, proofs begin to arrive. The first proofs are taken from the type as it is first set up in long galleys, and are called "galley" or "slip" proofs. With technical books, it is advisable to have these preliminary galley proofs, because it is conceivable that you may want to make some alterations, although *the proper place and time to make alterations is on the typescript before you send it to the publisher.* Still, things have a way of looking different in print; you can judge your own words more impersonally; and may even detect innocent and needless excursions into the perfectly obvious which were unperceived in your manuscript or typescript.

The galley proofs provide the opportunity for doing any supplementary work on the book that you may feel to be essential; and you should make up your mind not to add or subtract anything, once you have passed the galley proofs. When they have been returned to the publisher, the printer then makes them up into pages. They should be returned as a complete set and not piecemeal as you finish reading each galley. Indicate in the margin of the galleys where the illustrations should appear in relation to the text. If your illustrations are numbered consecutively, write their numbers in ink

at the appropriate places on the galley proof, and ring them round, so they won't be confused with your corrections and amendments. Use an ink that is different in colour from that used for the corrections. Don't do this until you have a duplicate set of pulls from the blocks which have been made from the illustrations. Only line blocks go into the text, for half-tone blocks, unless they are of a coarse screen, are printed on art paper plates which are inserted separately or, like the four plates in this book, appear at the end.

If your book is fairly straightforward, then time and money are saved if you ask your publisher to let the printer put it into page-proof form immediately, omitting galley proofs altogether. This allows the index to be prepared at the same time as the page proofs are read, which also saves time.

The reading and correcting of proofs is not a formidable job; and it is easily mastered with a little practice. There are standard symbols which are used for correcting proofs and these are set forth in the British Standards Institution publication, No. 1219: 1945, called *Printers' and Authors' Proof Corrections.* This costs half a crown, and it is one of the author's working tools.

Corrections should be made in the proof margins, and it is kind to the printer to make them in red or green ink. Correction marks in the margin are keyed to the text with special marks. The examples of the symbols used for the more common corrections and alterations that are shown on pages 118 and 119, are those recommended in the British Standards Institution's pamphlet.

Marginal mark	*Meaning*
	Delete
	Leave as printed
	Close-up—delete space between letters
	Insert space
	Reduce space
	Change to italics
	Change to roman type
	Change to capital letters
	Change to lower case
	Transpose
	Begin a new paragraph
	No fresh paragraph here
	Insert double quotation marks
	Insert comma
	Insert full-stop
	Invert type

Mark in the text

under letters or words to remain

linking words or letters

between words

under letters or words to be altered

encircle words to be altered

under letters or words to be altered

encircle letters to be altered

between letters or words, numbered when necessary

before first word of new paragraph

between paragraphs

encircle letter to be altered

The publisher should send you a duplicate set of proofs, one labelled "Marked proofs," which has on it the corrections made by the printers' reader. That skilled proof-reader will have spotted what are called "literals," or printers' errors, the small mechanical slips which can and do occur even in the work of the best compositors, such as letters in the wrong fount of type, or letters upside down or transposed, and so forth. These little errors can have the most devastating results; and one of the stock examples of misprints, quoted by Lieutenant-Commander Rupert T. Gould in his book, *The Stargazer Talks*, is the reference once made by a New York paper to General Wentworth, a Civil War veteran, as "a battle-scared warrior.' Threatened with a libel action, the paper published an apology which only made matters worse, for in it they said that what they meant was, of course, "bottle-scarred."[2]

Even the best printers' reader is not infallible—nobody is, not even the writer of a technical book—so don't assume that every "literal" mistake has been corrected. Even a full stop may appear upside down·

There are three mistakes on this page. Have you spotted them?

As you passed the page proofs you have been making the index, or some skilled person has been making it for you. At first you may think that making an index is a routine job that anybody can do, and you may begin to revise your ideas when you start doing it yourself.

[2] *The Stargazer Talks*, by R. T. Gould (Geoffrey Bles, 1943). A talk entitled "Mistakes and Misprints," broadcast December 29, 1936.

Almost certainly you have a high standard for indexes, because you are a user of technical books, and you know that a bad index is a baffling crime against an author's work, while a good one enhances the value of any technical book.

The quality of an index depends largely upon the intellectual, educational and personal quality of the indexer, a fact that is seldom realised. The job of indexing is too often regarded as a "hack" job, which can be done very quickly, when the page proofs come in, and that it doesn't much matter who does it, provided that he or she knows the alphabet. Making an index is hard, exacting and concentrated work.

It is the indexer's responsibility to check the proofs of his work, and he must insist on seeing such proofs and must be given adequate time to check them before the book goes to press. This is sometimes difficult, because the index proofs represent the last stage of a book, and the publisher and author, naturally anxious to see the end of it, try to hustle the index through without paying it the attention that it deserves.

There is no doubt that "a satisfactory index can be made only by the author himself or by somebody closely associated with him in the preparation of his book."[1] It is obvious that the indexer is better qualified for his job if he has some knowledge of the subject of the book, and about the book itself. He should at least have read it through before starting on the index. He must be capable of putting himself in the place of readers, of

[1] From a letter by Percy A. Scholes in *The Times Literary Supplement*, August 2, 1947.

realising *what* they are likely to look for, and *how* they will look, in the index.

If you can't find someone of the right calibre to make your index, then you should do the job yourself.

The index must tell your readers where to find information on any subject they may reasonably expect to be included in your book, and it must tell them concisely and exactly the *nature* of such information. There are no hard and fast rules for making an index. Various methods are described in the books listed on page 152. Some people make a continuous list, as they read, and sort it out afterwards; others use an alphabetically indexed loose leaf book, and others use slips of paper for each entry, again sorting them out afterwards. The alphabetically indexed loose leaf book is the most satisfactory method, for it is the easiest thing to handle. When the entries are completed, if the work has been done carefully and thoroughly on each entry, nothing remains but to put them into alphabetical order, which can be done when the finished index is typed.

Although it is usually best for an indexer to do his work in whatever way he finds simplest, there are certain rules which, if observed in the setting forth of the index, will make it much more satisfactory. These are compactly summarised on page 69 of *What is an Index?* (included in the list of books on page 152), and Mr. Scholes also gives some valuable points in the letter mentioned on page 121. The following are some good working rules:

(1) The index should be a straightforward alphabetical one, not divided under headings like Proper Names, or Place Names.

(2) Illustrations should be included: for instance, Balconies, cast iron, 18, 26, 130, *Figs. 1–15*.

(3) The titles of books should be set in italics, thus: *Fine Building*; and italics should also be used to indicate a quotation from another author: Fry, E. Maxwell, 13, 17, *quoted, 20–21*.

(4) Proper names should precede nouns where one word applies to both:

Fox, Charles James
Fox, habits of

(5) Where a word is related to different aspects of its meaning, these should be briefly indicated, thus:

Craftsmanship, in Abyssinia, 59, 60, 65, 82
decline in Britain, 81, 85, 92
related to mass production, 40, 101, 120, 135

NOT

Craftsmanship, 40, 59, 60, 65, 81, 82, 85, 92, 101, 120, 135

(6) Strict alphabetical order should be maintained throughout the whole length of words. Mr. Wheatley, in *What is an Index?* says, on page 57: "In arranging entries in alphabetical order it is necessary to sort them up to the most minute difference in spelling. In order to save themselves trouble some workers think they may leave off sorting at the third letter, and their idleness gives others much annoyance."

(7) Surnames alone should never be allowed: the Christian names or initials must appear; and towns and villages should always be followed by the county, and if necessary the country, in which they are situated. For instance, there are no less than *nine* towns of the name of Springfield in the world, according to Philips' Record Atlas, 1947 (page 170).

These few points about index making are simple and elementary. I am conscious of the fact that I have said more than once that various matters are simple and elementary; but that is because I have tried to explain as fully as I can the difficulties of writing a technical book, suggesting to the best of my ability how they may be overcome if they are inescapable, or avoided if they are unnecessary.

If you refer to Chapter I, you will realise that in these eight chapters I have followed the Belloc formula. I said that I was going to tell you how to write a technical book: then I told you: and now, in this last paragraph of the last chapter on the subject, I'm telling you that I *have* told you.

The three mistakes on page 120 are the use of a single quotation mark after "battle-scared warrior" instead of a double one; an inverted full-stop after the words "upside down," and the use of the numeral 2 instead of the numeral 1, or an asterisk.

CHAPTER IX

TECHNICAL DOCUMENTS—PAPERS, REPORTS AND MEMORANDA

"'Begin at the beginning,' the King said, very gravely, 'and go on until you come to the end: then stop.'"
Alice in Wonderland.

DOCUMENTS about technical subjects, whether they are in the form of papers prepared for learned or professional bodies, reports or memoranda, may be made as interesting to the reader as well-planned technical books. Such documents are really books in miniature, and should be planned and written with the care and creative quality of thought that a book receives from its author.

The Belloc formula may be used for the structure of a document, so that it falls into three parts:

(1) *The Introduction.*
(2) *The Factual Material.*
(3) *The Conclusion.*

The planning and preparation of documents may be briefly examined under those three headings.

(1) *The Introduction.* Readers of documents are more inclined to read introductions than readers of books; for they rightly hope to discover whether it is necessary for them to digest the whole document, or whether their

particular interest may not be covered by some section to which they can turn immediately. Apart from the full title of the paper, report or memorandum, the introductory material should include a note which gives, clearly and concisely, the reason why the document has been written and issued, at whose request (if any body or department has asked for it), and the objects it is supposed to achieve. The fulfilling of this obligation would prevent the author or authors from forgetting the nature and receptive powers and interests of readers. It would also prevent many specialists from underestimating the common sense of their prospective public. This tendency is probably the result of absent-minded innocence rather than of conscious condescension; but if you are a farmer, and you read *Agriculture: the Journal of the Ministry of Agriculture* and find that the opening sentence of an article on "Honey" tells you that "Honey is that sweet product manufactured by honey bees from the nectar which they abstract from the blossom of many trees and plants," old-fashioned proverbs about grandmothers and eggs invade the mind, accompanied by reflections that are possibly impolite.[1] Some specialists find it difficult to avoid the children's hour technique when introducing a subject; but the "now, my pets, I'm going to tell you a few cosy facts about the sex life of wasps" sort of opening is only a repellent form of the "getting up steam" paragraph.

In an introduction you should simplify what you have to say, but *never write down* to an audience, even

[1] "Honey," by George A. Carter, B.Sc., A.R.I.C. *Agriculture: the Journal of the Ministry of Agriculture*, Vol. LV, No. 1, p. 29.

though its members may, in your view, seem far below your mental horizon and technical attainments. Don't make the mistake either of over-simplifying a technical fact, so that it is conveyed in words which bring it into apparent conflict with ordinary common sense. The public statement once made in all good faith by a doctor that "hot soup doesn't warm you," while possibly correct, is simply rejected by 999 people out of every 1,000, because it sounds idiotic. And here I am quoting, by permission, a letter addressed to the prospective writer of a medical paper, by Dr. Arthur Lilker, which was published in March 1948 in *The Medical Bookman and Historian.*[1]

Dr. Lilker, a technician addressing technicians in a highly specialised field, has condensed into a few words some directions that are universally applicable to the writing of technical papers. This is his analysis of the mental condition of most people when they have a lot of technical knowledge, and are about to give birth to a paper:

"Your imposing statistics, neat diagrams, beautiful photographs, and impressive case-reports are nicely piled upon your desk. The general conception of the unborn paper is clear in your mind; a few convincing, striking sentences are already planned in your imagination. You are slightly worried about the construction of your article, but you trust that a shapely edifice will emerge by heaping the solid bricks of your knowledge and cementing them with your school-composition-

[1] "Heartache," a letter to the Prospective Writer of a Medical Paper, by A. Lilker. *The Medical Bookman and Historian,* Vol. II, No. 3.

style or with your after-dinner-style or with any style. The thorniest problem is how to begin; but the creative urge cannot allow the eager fountain-pen to remain suspended any longer over the immaculate sheet; in a second it will begin to trace the first words." He points out that "since you do not hope to invest it with all the qualities of a work of art, may I beg you to endow it with just one of them: simplicity?" Then comes his advice for beginning: "You have something to say. Start saying it, right from the beginning. Let us know immediately what it is all about. You know your subject very well indeed, and you assume, quite correctly, that we, your readers, lack the elementary knowledge. Be generous and do not point out our ignorance by filling your paper with basic information. We have a text-book too!"

When you have written your introduction, turn back to Chapter III and re-read the opening paragraphs. Then perhaps you may decide to cut your opening paragraph or paragraphs.

(2) *The Factual Material.* The factual part of the document should be easy to grasp and above all, easy to remember. You can be as discursive as you like, if your discursiveness underlines the points you want to make; but exclude ruthlessly any matter that leads you away from those points. Starting a hare is amusing enough, but even if you succeed in catching it, you have probably exhausted yourself and your readers as a result; so allow nothing to sidetrack you. Explore no avenues. Leave every stone unturned. Stick to the straight and narrow path, and give your readers facts, supplemented by illustrations which clarify or amplify their signifi-

cance. Never be prevented from using illustrations because of the difficulty of reproducing them: photostats, copygraphs or blue prints, can manifold diagrams or tabular matter without difficulty.

The charts, tables and graphs that you may use for conveying statistical or other information, should be numbered and properly titled, and—most important of all—given enough space to be easily read. Cramped tables of figures are confusing and irritating. Good planning and arrangement save more paper than overcrowding, for two reasons: firstly, a chart or a table that is well designed uses space to the best possible advantage. The truth of this statement is illustrated in the next chapter, where the redesigning of various forms is examined in detail. The second reason is that something crowded and difficult to read and grasp may be passed on, unread and perfunctorily initialled, or thrown away—so the document is wasted.

Use divisions and sub-divisions only if they make what you have to say easier to understand and to remember. Too many divisions and sub-divisions distract the eye and confuse the mind. If you have to use them, number your main divisions in Arabic numerals, and use the alphabet for your sub-divisions —you are unlikely to have more than twenty-six— and it's easier to remember a letter in relation to a number than it is to remember two sets of numbers, which would be necessary if you used Roman numerals for main divisions and Arabic for sub-divisions. You can, of course, make the worst of both possible worlds by using Roman numerals for the main divisions, and Arabic numerals supplemented by letters for the sub-

divisions. This inflicts upon your readers the obligation to remember that you have said something or other, which may be quite important, under Section IV, Sub-section 17 (*m*).

Bureaucracy begins to raise its ugly head at this point, and you can save the intelligibility and interest of your paper, by remembering in time that you are *not* recording the minutes of a government committee appointed, shall we say, to investigate the suspected decrease of sobriety in the species *Musca domestica* when domiciled in the vicinity of breweries.

Be brief, be clear, and, once again: when in doubt, *cut.*

(3) *The Conclusion.* Use your last paragraphs or section for telling them that you've told them, so that there is no possible mistake about what you have told them. Dr. Lilker has some sound observations to make about winding up a paper. "Your factual matter has been duly dealt with," he writes; "now you proceed to draw your conclusions. We all know that you hold strong opinions; why then be so wary when exposing them? Why say 'It seems that it might perhaps be . . .' when you are firmly convinced that 'It is . . .'? It might be the expression of a commendable modesty, but it definitely makes it harder to understand.

"Finally a few words about your summary at the end. Let it be a summary of your findings and not of your opinions; it will make things so much easier for me and for so many readers, who would be delighted to read your paper all through, had they time for it."

That is a practical reminder that readers don't read and often haven't the *time* to read every word you write.

So if you have a message, something of burning importance to say, condense its essential meaning into a few words, and let them be short.

At the end of the document, there should be a complete list of references to quotations and sources of information. The footnote should be avoided, and most of the suggestions for preparing and documenting literary material made in Chapter V are applicable.

A full and clear table of contents obviates the need for an index; for if the document exceeds six or seven thousand words, it comes into the pamphlet class, and if its prospective circulation justifies the cost, printing should be considered. The printed word is always more acceptable to readers and more authoritative in character than typescript.

The presentation of documents for circulation is a piece of mechanical production, in some ways comparable to book production, and should be regarded as such. Whether they are typed or manifolded by some duplicating process on quarto or foolscap sheets, papers, reports and memoranda should be bound in a thick card folder, if possible in such a way that individual pages cannot be easily removed. Foolscap is generally more convenient than quarto. The typing should be in single spacing, with generous margins at both sides and ample space at the top and bottom. The main headings should be in capital letters, and the sub-headings in lower case, underlined.

Be sparing of underlined words. In typescript they have a spotty and distracting effect; they lack the suave emphasis of italics, and too much underlining,

like an intemperate use of italics, by suggesting overstatement may diminish the authority of a document as well as making it intolerably jerky to read. Tiring the eyes of a reader is almost as bad as boring him.

Always remember that they don't want to read it.

CHAPTER X

THE REFORM OF FORMS

LANGUAGE which means little or nothing to ordinary people is used, not only by politicians, statesmen and pundits generally, but by those numerous officials in the modern state whose work brings them into daily contact with the public on paper. The language which is used for the thousands of forms which people in all walks of life today have to fill up in order to get anything, go anywhere or do anything, could be greatly simplified. Although this is the century of the Common Man, few people who write anything technical, legal or official are prepared to use language which the common man could reasonably be expected to understand; possibly, because the authors themselves would not admit that they were representative common men, and because like everybody else, they have never met anybody who would admit that he *was* a common man. Still, the language in which official business is conducted could be made easier to understand; it could be more colloquial, less stiff, less unfriendly, less repellent, less intimidating.

Hard words may break no bones, but they cause innumerable headaches, particularly when their hardness lies in their unfamiliarity, their length and their obscurity. It would be so easy to reduce so much official language to ordinary everyday language. I am

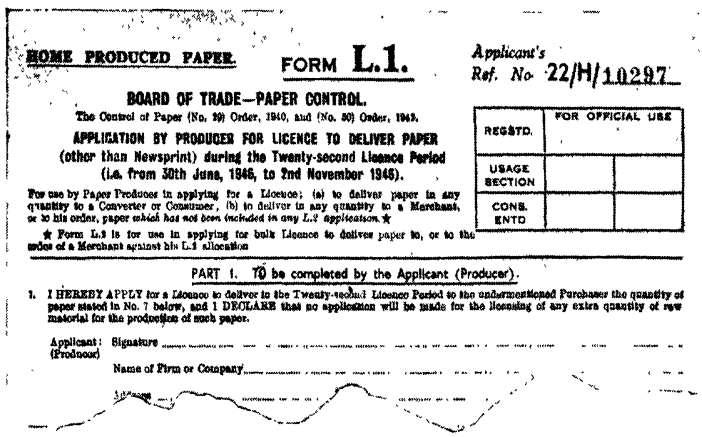
not advocating the boisterous colloquialism of the Cockney schoolboy, who was asked to paraphrase the opening lines of Shelley's *Ode to a Skylark*, and rendered "Hail to thee, blithe Spirit! Bird thou never wert," as "Wotcher! skylark, yer never was a bird."

The richly human poetic sense of the paraphrase is commendable; but it is possible to change what that schoolboy would no doubt have called "high-falutin' " language into everyday speech, without the reinforcing emphasis of slang.

Generally speaking, forms which are produced by trained civil servants and which have been in use for a long time are far easier to understand than the multiplicity of "emergency period" forms which are unskilfully worded by amateur bureaucrats and abominably designed—not designed at all, in fact. Of all the emergency period forms, those issued by the Ministry of Food are probably the clearest and the least intimidating; and this is due probably to the immense advantage the Ministry of Food derived from its early connection with Lord Woolton. As the chairman of a great retail store, Lord Woolton had formed the habit of thinking of the public as his customers; to him, as to any other successful and able retail distributor, the customer was always right; and it was therefore his duty to make things as easy and pleasant as possible for the customer. He carried over these ideals of relationship with the public to the Ministry of Food, and this healthy idea of serving the public, instead of pushing it around, is perceptible in the forms issued by that Ministry, although they could do with some typographical improvement.

Filling up a form should not be an exasperating exercise; it should be as easy and straightforward as telling the time. Unfortunately the questions on many forms seem either to have a catch in them—cunningly concealed—or to have been framed in the hectoring spirit of that querulous demand: "Answer yes or no: when did you stop beating your wife?" The appearance of many forms is unfortunate. Cramped and confused, they are apparently intended only for the use of people who have mastered the art of answering every kind of question in one word, or two at the most, or whose handwriting is microscopic. Also, and perhaps this is the most important grumble of all, most forms are repellent in colour and arrangement, grim and, to many people, really frightening.

If books, magazines and newspapers were made up and laid out as badly as nearly all government forms, nobody would trouble to read them. But books, magazines and newspapers are legible, and to legibility they add invitation by means of skilful layout and choice of type. Forms should be at least as easy, if not quite so inviting, to read. Paper shortage has been used as an excuse for the meagre size of forms; but the loss of paper that must result from people wasting two or more forms in trying to squeeze normal handwriting into inadequate space is not apparently considered. The best way of showing how some forms could be revised, is to use the old-fashioned technique of two illustrations: *before* and *after* treatment. (All the typographical revisions on the pages that follow have been suggested by Harry Jones, by whose permission they are reproduced.)



HOME PRODUCED PAPER. FORM L.1. Applicant's Ref. No. 22/H/10297

BOARD OF TRADE—PAPER CONTROL.

The Control of Paper (No. 29) Order, 1940, and (No. 80) Order, 1945.

APPLICATION BY PRODUCER FOR LICENCE TO DELIVER PAPER (other than Newsprint) during the Twenty-second Licence Period (i.e. from 30th June, 1946, to 2nd November 1946).

	FOR OFFICIAL USE	
REGSTD.		
USAGE SECTION		
CONS. ENTD		

For use by Paper Producers in applying for a Licence: (a) to deliver paper in any quantity to a Converter or Consumer, (b) to deliver in any quantity to a Merchant, or to his order, paper which has not been included in any L.2 application.★

★ Form L.2 is for use in applying for bulk Licence to deliver paper to, or to the order of a Merchant against his L.1 allocation

PART 1. TO be completed by the Applicant (Producer).

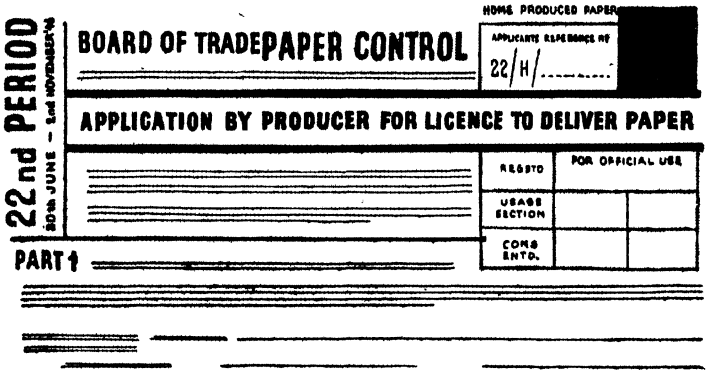
1. I HEREBY APPLY for a Licence to deliver in the Twenty-second Licence Period to the undermentioned Purchaser the quantity of paper stated in No. 7 below, and I DECLARE that no application will be made for the licensing of any extra quantity of raw material for the production of such paper.

Applicant (Producer): Signature .....

Name of Firm or Company .....

Address .....

THE WAY IT IS. Most forms have not been designed: they have just "happened." Above, reduced in size, is the upper part of a Board of Trade paper control form. The heading isn't laid out in an orderly way: everything is jammed in anyhow: you can't see quickly what the form's main purpose is or its identity number, or the allocation period it covers. The time of many busy people would be saved if such forms were instantly recognisable and easy to follow. This form could be designed so that essential matters were revealed at a glance.



THE WAY IT MIGHT BE. Here is a suggested lay-out for a revised version. It is now immediately apparent that this is a Board of Trade paper control form and that its number is L.I. as title and number are now placed in the best position for easy identification when turning over a number of forms quickly. An extra colour gives emphasis where it is needed. Other essentials are vividly apparent; it is unmistakably an application for a licence to deliver paper, for the 22nd period.

EFFICIENT AND DULL. Although the Ministry of Food has always produced the clearest forms, this reduced example is good, but a little grim. It has to be filled in by harassed, overworked housewives; and its severity seems to reflect everything that worries her: shortages, queues, utility and austerity. It also manages to suggest that if she is not already a criminal she has almost become one, because she has lost her ration book. (It is not the business of a government department to administer reproof.)

MINISTRY OF FOOD

APPLICATION FOR REPLACEMENT OF RATION BOOK OR OTHER DOCUMENT LOST, STOLEN, OR DESTROYED

When completed, this form must be taken to the local Food Office, with the Identity Card

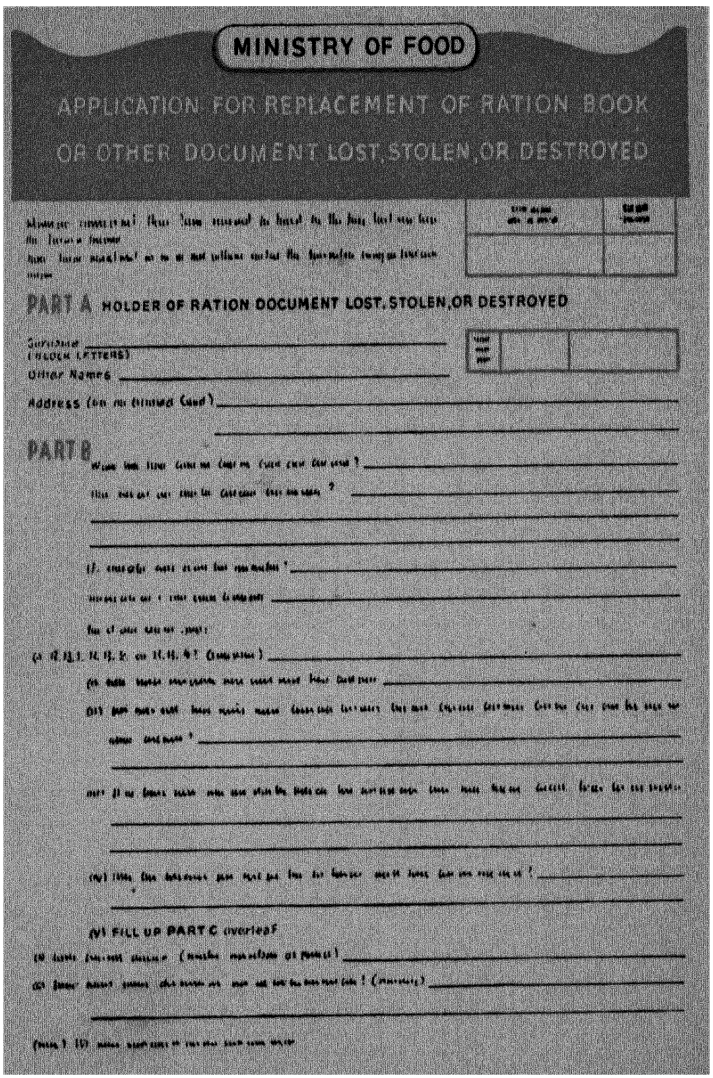
Any false statement is an offence under the Defence (Gen... 1939

PART A HOLDER OF RATION DOCUMENT LOST, STOLEN, OR DESTROYED

PART B

Fill up PART C overleaf

EFFICIENT AND CHEERFUL. This form has now been brightened up: the shaped panel and the use of two colours on a yellow paper dispel much of the original depression. While it doesn't make the occasion of a lost ration book exactly cheerful, it does make it less lugubrious, not only for the public, but for the Ministry officials who have to deal with the unfortunate case. When millions of forms are printed, the extra cost of colour is negligible because of the savings that arise from quantity production.



MINISTRY OF FOOD

APPLICATION FOR REPLACEMENT OF RATION BOOK OR OTHER DOCUMENT LOST, STOLEN, OR DESTROYED

PART A HOLDER OF RATION DOCUMENT LOST, STOLEN, OR DESTROYED

Surname
(BLOCK LETTERS)
Other Names
Address (on ration book)

PART B

(V) FILL UP PART C overleaf

COMPLICATIONS AND OVER-EMPHASIS. In the reduced facsimile of an application form for a passport shown opposite, the lack of design causes maddening confusion. Indeed, the form might have been intended as a deterrent to foreign travel. With a little thought it could have been made much simpler, both for the applicant and for the scrutinising officials. Emphasis for any statement is given by using bold type and underlining it; and this is done so frequently that a form often becomes a mere brawl with statements shouting each other down. Compare this with the revised version suggested on page 145.

The whole of the Declaration and Marginal Particulars should be in the Applicant's own handwriting

(A)

This space is reserved for official use.

* Surname only in Block Capitals.

DECLARATION TO BE MADE BY APPLICANT FOR PASSPORT ‡

(In the case of children under the age of 16 years requiring a separate Passport, the Declaration must be made by the child's father or other legal guardian or a form (B) to be obtained upon application to the Passport Office)

(a) Insert date and town where staying when filling in the form.

(b) Christian names and surname of the applicant in full (Surname in BLOCK CAPITALS)

(c) In the case of a WIDOW, MARRIED WOMAN or one whose marriage is dissolved, the particulars of status and birth required at (d) are those of HER LATE HUSBAND not of the applicant herself

(d) State exact national status, e.g. a British subject by birth or a British subject by naturalisation British-protected person, &c. In the case of a NATURAL SUBJECT BY NATURALISATION AND RESUMPTION ? as BACK

(e) Wife and/or children should only be included if they do not possess separate Passports (Strike out the words in brackets in other cases

(f & g) Strike out and initial whichever is not applicable

NOTE.—All previous Passports must be presented for

(h) Signature of applicant. The applicant must also write a specimen of his signature on the slip attached below marked "

(i) Name and qualification of person certifying the declaration (see Regulation 6 at back) viz. —

Member of Parliament, Mayor, Magistrate, Present Justice of the Peace, Minister of Religion, Barrister-at-Law, Notary, Solicitor, Physician, Surgeon, &c (giving professional or business address)

Recommendations from members or officials of *Banking Firms* should bear the printed stamp of the Bank here below

CAUTION

† The attention of persons who are asked to sign this declaration is specially called to the fact that it can only be signed from personal knowledge of the applicant and not from information obtained from other persons

(a) 194

*I,† the Undersigned (b)

at present residing at hereby declare that I am

(c) For MARRIED WOMEN (to be struck out in other cases). Particulars of HUSBAND'S birth to follow

the widow / wife / former wife of ... and that my late husband / husband / former husband was

a (d) having been born

at on the day of 1

FOR PERSONS BORN ABROAD who derive British nationality from a father or paternal grandfather born within His Majesty's Dominions (To be struck out in other cases)

my (his) father / paternal grandfather having been born within His Majesty's Dominions at on the day of

and not having lost the status of British subject thus acquired I hereby apply for a Passport for travelling to

for the purpose of

(e) [accompanied by my wife (and children under the age of 16) as indicated in the margin who do not possess separate Passports]

(f) I declare that I have not previously been granted any Passport whatever and that I have made no other application for a Passport

(g) I declare that all previous Passports granted to me have been surrendered for cancellation to a British Passport or Consular Officer other than Passport No which is now attached for cancellation and that I have made no other application for a Passport since the attached Passport was issued to me

(h) Signed.

†And I, the Undersigned (i)

of , a British subject, hereby declare that to the best of my personal knowledge and belief the above-made declaration and description of the said Mr / Mrs / Miss are true and that I can from my personal knowledge of him / her vouch him / her as a fit and proper person to receive a British Passport. I have known the applicant for years

Signed:

PHOTOGRAPHS: Two small unmounted duplicate photographs of the applicant (and wife if to be included) must be sent (see instructions overleaf)

Description of Applicant.

National Registration Identity Card Number:

Age

Profession

Place of birth

Date of birth

Usual place of residence

Height feet inches

Colour of eyes Colour of hair

Visible distinguishing marks or peculiarities

Whether married, single or marriage dissolved

Maiden name of woman who is or has been married (in Block Capitals)

If name has been changed by Deed Poll or otherwise the original name must be stated here

If there has been no change of name this word None must be written here

Signature of applicant

Description of Wife of Applicant, if to be included on the Passport

National Registration Identity Card Number:

Name in full.

Age

Profession

Place of birth

Date of birth

Height feet inches

Colour of eyes Colour of hair

Visible distinguishing marks or peculiarities

Maiden name (in Block Capitals).

Signature of wife of applicant

Sign your name on the slip which will be detached and affixed to the Passport when issued

Specimen signature of wife if to be included on the Passport.

IMPORTANT

‡ Applicants and persons recommending them, are warned that should any of the statements contained in their respective declarations prove to be untrue the consequences to them may be serious.

Children under the age of 16 if to be included on this Passport.

Christian Names.	Surname	Place and Date of Birth.	Sex.

Here coloured headings and initials guide the applicant for a passport, indicating clearly and precisely how he is expected to fill in each line. The most important note is brought to the top, and the vital word in that note, "handwriting," is printed in black. Variation in size and weight of type is used to give emphasis where necessary, and there is no underlining. It is now clear that two people have to fill in the form, namely the applicant and the guarantor. All instructions and cautions are grouped in one column, so the applicant may read them in legible sequence. The panel that refers to children under sixteen is now put in an obvious place. More space is left for signatures. A second colour is used, also tinted paper.

Application for Passport

The whole of the declaration and marginal particulars should be in the applicant's own **handwriting**

A

READ

How to fill in the declaration

a Insert date and town where issuing when filling in the form.

b Christian names and surname of the applicant in full. (Surname in BLOCK CAPITALS.)

c In the case of a widow, married woman or one whose marriage is dissolved, the particulars of father and both parents as to any issue of her late husband or parents of the applicant herself.

d State exact national status, *e.g.*, a British subject by birth or a British subject by naturalisation, British-protected person, *etc.* IN THE CASE OF A PERSON BORN BY NATURALISATION SEE SPECIAL NOTICE AT BACK.

e Wife and/or children should only be included if they do not possess separate Passports. Strike out the words in brackets in other cases.

f Strike out and initial whichever is not applicable.

NOTE.—All previous Passports must be surrendered for:

g Signature of applicant. The applicant must also write a specimen of his signature on the slip attached below marked "X."

h Name and qualification of person certifying the declaration (see Regulation 8 as to) *etc.*—

Member of Parliament, Mayor, Magistrate, Principal Judge of the Court, Minister of Religion, Barrister-at-Law, Notary, Solicitor, Physician, Surgeon, &c., giving particulars of business address.

Recommendations from members of all officials of Banks or Firms should bear the normal stamp of the Bank here below.

CAUTION The attention of persons who are asked to sign the declaration is especially called to the fact that it can only be signed from personal knowledge of the applicant and not from information obtained from other persons.

IMPORTANT Applicants, and persons recommending them, are warned that almost any of the statements contained in their respective declarations prior to the issue, the consequences to them may be serious.

FILL IN

(In the case of children under the age of 16 years requiring a separate Passport, the Declaration must be made by the child's father or other legal guardian on a form (B) to be obtained upon application to the Passport Office.

DECLARATION to be made by applicant for passport ‡

a _____ 194____

I, THE UNDERSIGNED

b (Surname ONLY in BLOCK CAPITALS) _____

at present residing at _____ **hereby declare that I am**

c (FOR MARRIED WOMEN (to be struck out in other cases). Particulars of husband's birth to follow.

the wife | widow | former wife | of _____

and that my husband is | late husband was | former husband was |

d a _____ having been born

at _____ on the _____ day of _____ 1_____

(FOR PERSONS BORN ABROAD, who derive British nationality from a father or paternal grandfather born within His Majesty's Dominions. (To be struck out in other cases.)

my (his) father | paternal grandfather | having been born within His Majesty's Dominions

at _____ on the _____ day of _____

and not having lost the status of British subject thus acquired, I hereby apply for a Passport for travelling to _____

for the purpose of _____

e (accompanied by my wife (and children under the age of 16), as indicated below, who do not possess separate Passports).

f I declare that I have not previously been granted any Passport whatever, and that I have made no other application for a Passport.

g I declare that all previous Passports granted to me have been surrendered for cancellation to a British Passport or Consular Officer, other than Passport No. _____ which is now attached for cancellation, and that I have made no other application for a Passport since the attached Passport was issued to me.

h Signed _____

DECLARATION to be made by person recommending applicant †

I, THE UNDERSIGNED

of _____ a British subject, hereby declare that to the best of my personal knowledge and belief the above-made declaration and description of the said Mr. | Mrs. | Miss | _____ are true, and that I can from my personal knowledge of him | her | vouch him | her | as a fit and proper person to receive a British Passport.

I have known the applicant for _____ years.

† Signed _____

PHOTOGRAPH.—THE SMALL UNMOUNTED RECENT PHOTOGRAPH OF THE APPLICANT (AND WIFE IF TO BE INCLUDED) MUST BE SENT. GLOSS FINISH.

CHILDREN UNDER THE AGE OF 16 IF TO BE INCLUDED ON THIS PASSPORT

	Christian Names	Surname	Place and Date of Birth	Sex
(a)				
(b)				
(c)				
(d)				

FILL IN

DESCRIPTION OF APPLICANT

NATIONAL REGISTRATION NUMBER | | :

AGE _____

PROFESSION _____

PLACE OF BIRTH _____

DATE OF BIRTH _____

USUAL PLACE OF RESIDENCE _____

_____

HEIGHT _____ FEET _____ INCHES

COLOUR OF EYES _____ COLOUR OF HAIR _____

VISIBLE DISTINGUISHING MARKS OR PECULIARITIES _____

_____

WHETHER MARRIED, SINGLE OR PARTNER DISSOLVED _____

_____

MAIDEN NAME OF WOMAN WHO IS OR HAS BEEN MARRIED _____

(IN BLOCK CAPITALS) _____

IF NAME HAS BEEN CHANGED BY DEED POLL OR OTHERWISE THE ORIGINAL NAME MUST BE STATED HERE _____

_____

IF THERE HAS BEEN NO CHANGE OF NAME THE WORD "NONE" MUST BE WRITTEN HERE _____

SIGNATURE OF APPLICANT _____

DESCRIPTION OF WIFE OF APPLICANT

(IF TO BE INCLUDED ON THE PASSPORT)

NATIONAL REGISTRATION NUMBER | | :

NAME IN FULL _____

_____

AGE _____ PROFESSION _____

PLACE OF BIRTH _____

DATE OF BIRTH _____

HEIGHT _____ FEET _____ INCHES

COLOUR OF EYES _____ COLOUR OF HAIR _____

VISIBLE DISTINGUISHING MARKS OR PECULIARITIES _____

_____

MAIDEN NAME (IN BLOCK CAPITALS) _____

SIGNATURE OF WIFE OF APPLICANT _____

LEAVE BLANK

This space for official use

SIGN

Sign your name on the slip. It will be detached and affixed to the Passport when issued.

SIGNATURE OF APPLICANT

SIGNATURE OF WIFE OF † TO BE INCLUDED

How to Confuse an Issue. The two forms shown on the opposite page come from the Ministry of Works. On both the numbers are obscure, though they are vitally important to those who have to complete many forms. The points that builders and other users have to grasp quickly are buried. As they stand these forms may cause confusion, and almost certainly they demand a lot of unnecessary study.

Compare them with the suggested revisions on page 149, where everything is quickly apparent, and the purpose of the forms can be recognised at once.

C L 1136B

MINISTRY OF WORKS.

CONTROL OF CIVIL BUILDING

DEFENCE REGULATION 56A

APPLICATION FOR BUILDING LICENCE FOR SMALL DWELLING

PART I—TO BE COMPLETED BY THE APPLICANT.

1 Full name and address of Applicant(s), i e person(s) paying cost of the proposed work	BLOCK LETTERS Telephone Number (if any)
2. Address at which the house is proposed to be built	BLOCK LETTERS
3. Anticipated period, in weeks, between the issue of the licence (if granted) and the start of the work	
4 Is the site developed with the roads and sewers?	
5. Brief constructional details and specification of the house	

C.L. 1160.

MINISTRY OF WORKS

CONTROL OF CIVIL BUILDING

Defence (General) Regulations, 1939: Regulation 56A.

APPLICATION FOR BUILDING LICENCE

MAINTENANCE

I/WE, the undersigned, hereby apply for a Licence to carry out maintenance work (*see Note 1 on this form*).

1. Full name of Applicant(s), i.e., Building Owner(s) or person(s) paying cost of the work of maintenance
(BLOCK CAPITALS)

Full postal address
(BLOCK CAPITALS)

2 Address of premises at which the work will be carried out

Local Authority of area in which property is situated

Nature of business (if any) carried out on the premises

Description of premises, e.g., office, warehouse, private dwelling-h... &c.

RECOGNISABLE AT A GLANCE. Opposite are lay-outs indicating revised versions of the forms shown on page 147. The numbers are printed in large and legible type; colour, typography and general arrangement combine to ensure swift identification. It would be possible to pick these out from a mass of forms and to know what they were for without any sorting and fumbling.

These suggestions are not made in any spirit of carping criticism; if forms were revised on these lines, an incalculable amount of time would be saved and any amount of bad temper, irritation and friction would be avoided, and a great deal of grumbling permanently abolished.

Forms, like many technical documents and books, suffer from absence of design. And design is common sense lit by imagination.

MINISTRY OF WORKS CONTROL OF CIVIL BUILDING DEFENCE REGULATION 56A **C.L.1136B**

APPLICATION FOR BUILDING LICENCE SMALL DWELLING

PART 1 TO BE COMPLETED BY THE APPLICANT

1 BLOCK LETTERS

2 BLOCK LETTERS

3

4

MINISTRY OF WORKS CONTROL OF CIVIL BUILDING DEFENCE REGULATION 56A **C.L.1160**

APPLICATION FOR BUILDING LICENCE MAINTENANCE

1

2

APPENDIX

(1) EXAMPLES OF BOOK PLANNING

The books included in this short list are all examples of good planning, and show different methods of handling large and small masses of material in an orderly way, so as to put the least possible strain upon the reader.

Ancient Hunters and their Modern Representatives, by W. J. Sollas. (Macmillan & Co. Ltd., 1924.)

Ancient Town-Planning, by F. Haverfield. (The Clarendon Press, 1913.)

Animal Biology, by J. B. S. Haldane and Julian Huxley. (The Clarendon Press, 1927.)

Building is your Business, by Mark Hartland Thomas. (Allan Wingate, 1947.)

Cast Iron in Building, by Richard Sheppard. (George Allen & Unwin Ltd., 1945.)

Democracy and Liberty, by William Edward Hartpole Lecky, in two volumes. (Longmans, Green & Co. Ltd., 1896.)

The Economics of Advertising, by F. P. Bishop. (Robert Hale Ltd., 1944.)

The Englishman's Food: A History of Five Centuries of English Diet, by J. C. Drummond and Anne Wilbraham. (Jonathan Cape, 1939.)

An Enquiry into Industrial Art in England, by Nikolaus Pevsner. (Cambridge University Press, 1937.)

A History of Architecture on the Comparative Method, by Sir Banister Fletcher. (Batsford Ltd., fourteenth edition, 1948.)

The Holy Roman Empire, by James Bryce. (Macmillan & Co. Ltd., 1871.)

The Industrial Development of Birmingham and the Black Country 1860–1927, by G. C. Allen. (George Allen & Unwin Ltd., 1929.)

The Master of Game, by Edward, Second Duke of York. The oldest English book on hunting, edited by Wm. A. and F. Baillie-Grohman, with a Foreword by Theodore Roosevelt. (Chatto & Windus, 1909.)

The Principles of Architectural Composition, by Howard Robertson. (Architectural Press, 1924.)

The Revolutions of Civilisation, by W. M. Flinders Petrie. (Harper & Brothers, 1922.)

The Scenery of England and the Causes to which it is due, by The Right Hon. Lord Avebury. (Macmillan & Co. Ltd., 1904.)

Those Raw Materials: an Introduction to the Study of Raw Materials, by C. A. Ward. (George Allen & Unwin Ltd., 1941.)

Towards a New Architecture, by Le Corbusier. (John Rodker, 1927.)

TVA: an adventure in planning, by Julian Huxley. (Architectural Press, 1943.)

The Vulgar Heart: An Enquiry into the Sentimental Tendencies of Public Opinion, by Doris Langley Moore. (Cassell & Company Ltd., 1945.)

Your Money and Your Life: an Economic Introduction to Everyday Affairs, by Herbert V. Geary. (Edward Arnold & Co., reprinted 1946.)

(2) BOOKS FOR REFERENCE

The following are recommended for preparatory reading before you plan a technical book.

An A.B.C. of English Usage, by H. A. Treble and G. A. Vallins. (The Clarendon Press, 1936.)

Authors' and Printers' Dictionary: A Guide for authors, editors, printers, correctors of the press, compositors and typists, with full list of abbreviations. An attempt to codify the best typographical practices of the present day, by F. Howard Collins. (Oxford University Press, 8th edition, 1944.)

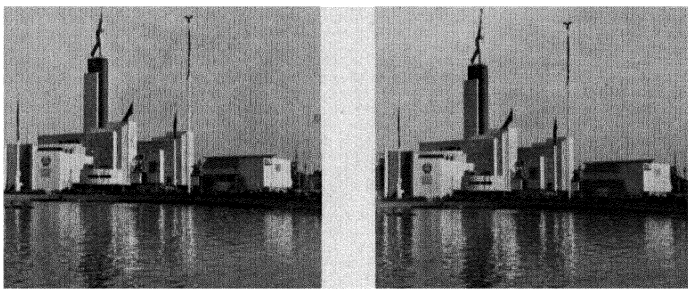
A Dictionary of Modern English Usage, by H. W. Fowler. (The Clarendon Press, 1926.)
How to make an Index, by Henry B. Wheatley. (Eliot Stock, 1902.)
The Indexing of Books and Periodicals, by John W. T. Walsh. (Edward Arnold & Co., 1930.)
Plain Words: A Guide to the use of English, by Sir Ernest Gowers. (H.M.S.O., 1948.)
The Printed Book, by Harry G. Aldis. (Cambridge University Press, 2nd edition, 1947.)
Something about Words, by Ernest Weekley. (John Murray, 1936.)
The Truth about Publishing, by Sir Stanley Unwin. (George Allen & Unwin Ltd., fifth edition, 1947.)
What a Word! by A. P. Herbert. (Methuen & Co. Ltd., 1935.)
What is an Index? by Henry B. Wheatley. (Henry Sotheran & Co., 1878.)
Words Ancient and Modern, by Ernest Weekley. (John Murray, 1927.)
Words and Names, by Ernest Weekley. (John Murray, 1932.)

THE END

INDEX

Note.—A page number in heavy type denotes that, in addition to the other references, an illustration of the subject appears on that page.

PLATE I.



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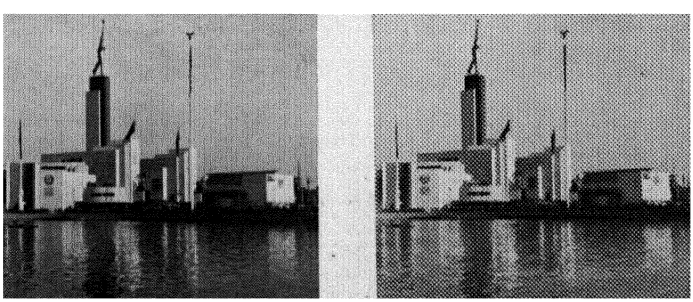
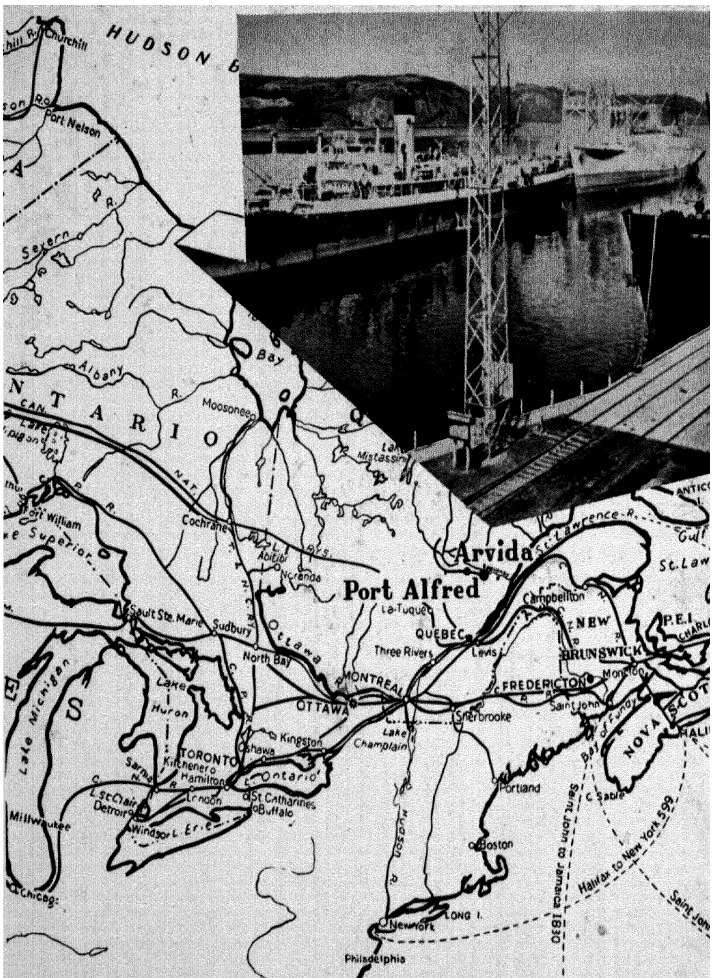
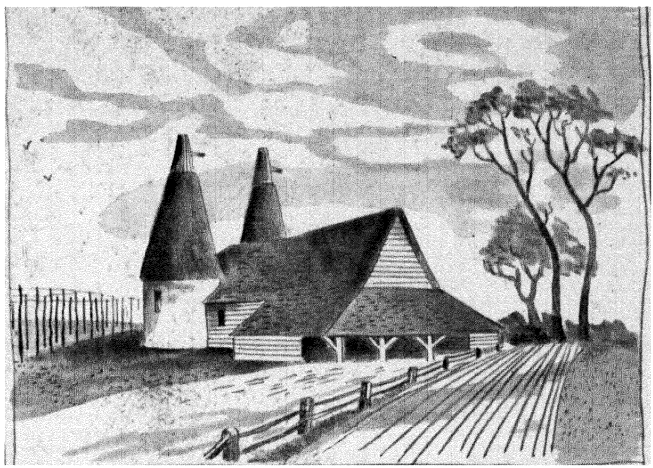


100 65

Half-tone reproductions of the Russian Pavilion at the New York World Fair, 1939, in four different screens. The number of dots to the square inch is indicated by the figures 150, 120, 100 and 65. (From a photograph by G. L. Pilkington.)



A combined line and half-tone block. (This section of a map of Canada, with a photograph of Port Alfred on the Saguenay River imposed upon it, is reproduced by courtesy of Aluminium Union Limited.)



A half-tone reproduction of a pencil drawing by Lionel Allston, showing the same subject that appears in pen and ink, on page 87. Below, a half-tone reproduction of a wash drawing of the same subject.

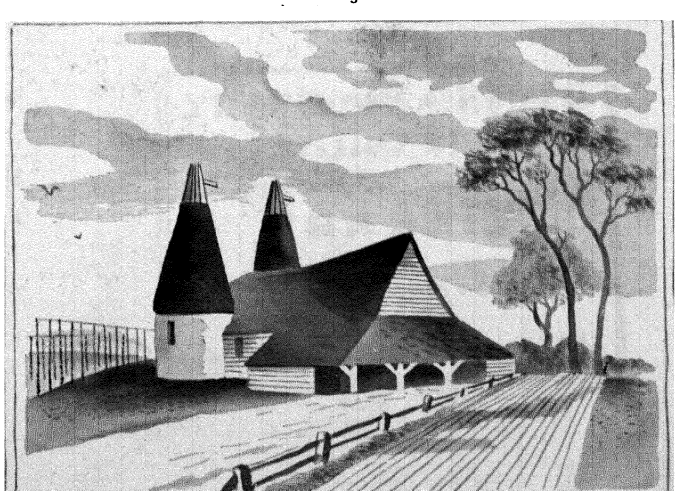


PLATE IV.

A scene in the Catskill Mountains, New York, U.S.A., from a photograph by F. S. Lincoln. The block is "bled" off the page.
(See page 107.)