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PRINCIPLES OF INSURANCE

VOLUME II: FIRE



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PRINCIPLES OF INSURANCE

VOLUME II: FIRE

BY

W. F. GEPHART

PROFESSOR OF ECONOMICS IN WASHINGTON UNIVERSITY

New York

THE MACMILLAN COMPANY

1922

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PREFACE

THE literature on insurance is considerable in amount, but that which is accessible for use in schools and colleges is meager. Government documents, official reports of insurance companies and of organizations of insurance officials and employees, pamphlets and published addresses on the subject are the chief sources of the best information on insurance.

It is therefore because of the conviction of the importance of insurance, the character of the literature, and the increasing importance of the subject in the curriculum of educational institutions that this discussion is offered.

The two volumes on life and fire insurance are offered, not as a complete discussion of these two important forms of insurance, but rather as a statement of what is conceived to be the more important considerations which should receive study in a general course in life and fire insurance. The material has been selected on the basis of the author's experience in teaching the subject, his experience in the business, and his association with insurance organizations. As textbooks, they will need to be supplemented by the instructor, by reference reading as well as by the use of policy forms, company reports, government reports, and other available material.

The author is aware that his discussion of certain questions relating to the regulation of insurance is

opposed in some cases to the prevailing public sentiment and practice. But it has been the purpose, not only to state as briefly as possible the important facts and principles of life and fire insurance, but also to provoke thought and discussion on certain mooted questions in insurance.

An effort has been made to select such readings on each topic as would be most helpful. Much of the best literature is either in pamphlet form or in the insurance journals. An exception is made in the case of insurance statistics. Such annuals as the Insurance Year Book of the Spectator Company leave little to be desired in the way of statistical literature. An exception is also to be made in the case of the German and French literature, much of which is of a very high character and in general much more extensive than the literature in English. Few references to this literature have been made; first, because most of it is not accessible to the reader of this book, and second, because this is an elementary discussion of the principles and practices of insurance.

W. F. GEPHART.

WASHINGTON UNIVERSITY.

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PRINCIPLES OF INSURANCE

CHAPTER I

THE HISTORICAL DEVELOPMENT OF FIRE INSURANCE

Social Basis of Insurance. — The development of fire insurance may be divided into two periods: First, that of informal organizations, composed of the mutual associated efforts of groups and acts of government which from a very early period in the history of human society sought to reduce and repair the damage occasioned by the occurrence of fire. This instinct of coöperation and sympathy for a member of the group suffering a loss expressed itself in many forms in early society. Second, that of the business organization of fire insurance when definite organizations either in form of corporations, mutual associations, or individual business units sold protection from the damages incident to a fire for a price called a premium.

Conditions Preventing Early Development of Insurance. — It was not until property was held by a large number of the social group, that is, not until many different individuals were directly affected by the losses due to fire that formal organizations could exist for the purpose of insuring against losses by fire; nor could fire insurance

as a business exist until there was some understanding of the causes of fires and some perception of the regularity of the occurrence, that is, of the law of averages. Fire insurance, like all forms of insurance, is predicated upon the regularity of recurrent events. The data for the determination of such a law of averages were not available in the early history of industrial society. Nor was there a fund of capital which could be productively loaned to meet the requirements of modern fire insurance as a business.

The essential features of all insurance — foresight and coöperation — were largely non-existent. Chance, as the determining factor in human affairs, was a common belief. Coöperation is powerfully stimulated if the individuals by whom it is applied perceive some direct benefit. This was not true in the earlier time when individual ownership of property was not important. The motive did not exist even if the knowledge of the means to apply insurance had been present. Property was largely owned by a minority of society, and its loss was not so seriously or directly felt, since the position of power enjoyed by the minority made it possible for them to recoup in part or in whole their loss from the labor of the dependent majority.

It is to be recognized that the character of the industrial life and the property did much to retard the development of fire insurance. The industrial life was simple. A large part of the economic activities was confined to the pastoral and agricultural industries, or to other simple extractive industries. What manufacturing there was, centered very largely in the house-

hold. There were no large factories with their concentration of large property values. The merchandising was also of a very simple character, usually with no large stock of goods, located at a particular point. Society did not in the earlier day possess a large, diverse stock of goods with large amounts located at one point and owned or traded in by a single individual or firm. It is also to be noted that the earlier centers of civilization in western Asia and southern Europe had less need for the continuous use of fire, and that the chief building material — clay and stone — did much to reduce the danger of loss by fire. There were no furnaces, electrical wiring, matches, and the many other modern causes of fire. It is true that the cities were often poorly constructed from a modern fire insurance standpoint, and that there were few modern fire-fighting devices. Disastrous fires were therefore not unusual occurrences. London had had, for example, disastrous fires in 798, 892, 1086, 1212, before the conflagration of 1666.

Precursors of Modern Insurance.— As the industrial life became more complex, as manufacturing and commerce with its accompanying institutions of exchange and marketing developed, the need and occasion for formal organizations to supply fire protection arose. Long before the establishment of these business organizations, many different kinds of associations and activities existed to prevent fires, and to assist those who suffered from their occurrence.

Magistrates or priests in very early society were accustomed to levy compulsory contributions among the

people of a city for the purpose of aiding those who had suffered by fires. It will be observed that this was an early form of assessment insurance by the state and differs in its essentials from the modern practice of Fire Insurance in that it included all the members of the community. In this respect, indeed, it was superior to our present plan, since all property owners do not under our present plan insure their property and aid in paying the fire loss which in theory may as well fall on the uninsured as on the insured. That is to state, the ideal plan would be to have all property insured, since all property owners as well as non-property owners are interested in having property insured and are benefited by the existence of insurance. This is true in part because the non-insured property is better protected as a result of the many activities of fire insurance companies, and organizations, public and private, which endeavor to reduce the hazard of fire. If the state should take over the business of fire insurance, the only logical method of conducting it would be the compulsory insurance of all property.

The Insurance Aspect of the Guilds. — During the Middle Ages the Guilds provided from the contributions of their members funds to repair the losses by fire which the members suffered. This was but one of the many activities of these Guilds, which existed for the mutual benefit of their members. For example, in the Guild of the Palmers, established at Ludlow (Herefordshire) in 1284, an ordinance provides that "when it happens that any of the brethren or sisteren of the Guild shall have been brought to such want through

theft, *fire*, shipwreck, fall of house, or any other mishap . . . then once, twice, and thrice but not a fourth time, as much help shall be given to them out of the goods of the Guild, as the Rector and Stewarts, having regards to the deserts of each and to the means of the Guild, shall order."

There is also some evidence that these Guilds were sometimes formed or developed into organizations whose chief purpose was the protection of the members' property.

In the fifteenth century there was found in Schleswig-Holstein an organization called Brandgilden, which probably developed from the earlier organization known as Brüderliche, which was formed to protect in general the property of its members. The Brandgilden were municipal organizations interested in mutual fire insurance protection.

In 1635 a petition was made to King Charles I of England for authority to insure property against fire losses but there is no record that a patent was issued.

Early Fire Insurance Proposals in England. — Three years later another petition was made to the King for letters patent for the term of forty-one years to establish a fire insurance organization. It was proposed to insure houses within the city of London and its suburbs at a rate of 12 pence per annum for every house yielding £20 yearly rental. Fire engines and watchmen were to be provided for every ward in the city, as well as reserves of water conveniently located for use when a fire occurred.

The modern fire department, the fire watchman, the

salvage corps, and water protection are suggested at this early date. The King referred the petition to the Attorney-General who considered the propositions "reasonable if the petitioners according to theyre offer be tyed to theyre limitations and that no man be pressed to come in to subscribe but every man left to his voluntary choyce."

In the petition, the proposer had agreed to deposit £5000 with the government, which should be increased until it amounted to £10,000. This sum was to be held by the government and be invested by it so as to earn £5 on the £100. This was a forerunner of the present deposit required of stock fire insurance companies by the state to guarantee the loss payments. The petitioners had also suggested compulsory insurance, hence the modification suggested in this particular by the Attorney-General. The King granted the petition and ordered the Attorney-General to prepare a bill, granting the desired privileges.

The contest between Charles I and Parliament was probably responsible for the failure of the proposal. After Charles II ascended the throne, a proposal was made to him for the formation of a fire insurance organization. The king favored the project and recommended it to the consideration of the common council of London. The council rejected the proposal "because they thought it unreasonable for private persons to manage such an undertaking, or that any one but the city should reap the profits of the enterprise." It will be observed that this was an early expression of the belief in government insurance, which in the United

States has only of late years been a subject for general discussion.

On the continent there had existed organizations for protecting property against fire. In 1753 there was published in Hamburg an essay on Insurance by one Magens in which it is stated that a "Fire Casse" had long existed in that city, which insured the principal houses to the value of 15,000 marks "to be paid in case of their being burnt."

The great London fire of 1666, which destroyed over eighty per cent of the buildings in London, did much to accelerate the development of fire insurance as a business in England. Immediately after this destructive fire many different proposals were advanced for insuring houses.

Dr. Nicholas Barbon, who had been "a leading builder of the city of Lond," opened in 1667 an office for insuring houses and buildings. This was a system of individual underwriting and was similar to that which already existed in marine and life insurance, especially in the case of marine insurance. Individual underwriting at this time was quite possible, owing partly to the difference in the amount of the premium received at that time in comparison with the small premiums now received. The amount insured on each risk was also usually small.

Many plans for insuring property were laid before the Council of London with a view of having the city assume this work. In 1681 the city council resolved "to undertake ye insuring of all Houses within the city and Libertyes."

In the meantime Barbon and some associates had organized in 1680 a joint stock corporation, known as the Fire Office, with a capital stock of £40,000. The premiums were based upon the rental value of the property; and on frame houses the rates were double those on brick, thus illustrating one of the earliest examples of schedule rating, although only the construction feature of the hazard was considered.

Early Discussion of Public *versus* Private Fire Insurance. — When the city of London decided in 1681 to insure property, discussion arose in respect to the merits of public and private insurance. Broadsides appeared, and the newspapers contained numerous discussions of the subject. The Fire Office issued a pamphlet of "Enquiry whether it be to the interest of the city to insure houses from Fire; and what advantage the insured may expect more than from the Insurance Office already settled." Many phases of the discussion are similar to those of the present day in reference to the respective merits of state and private insurance. The city of London retired from this particular venture after a year's experience. The Fire Office continued in business and in time came to be known as the Phœnix Office from its badge of a Phœnix in the flames.

Mutual *versus* Stock Insurance. — Soon, however, this private corporation was to have a competitor. In 1683 a proposal was issued "for securing Houses from any considerable Loss by Fire, by Way of Subscription and *Mutual* contribution." This was the first of the Friendly Societies and the real beginning of

modern mutual fire insurance. It will be understood from the preceding descriptions that the mutual principle of protecting members of a social group against the losses due to fire had long existed. But the mutual organizations which were now to be formed were characterized by more formal organization with specific duties and privileges on the part of its members. Each member of this Friendly Society agreed when they joined to pay not to exceed 30*s.* for every £100 of insurance. This sum was to remain in the members' possession, except that 6*s.* 8*d.* of every 30*s.* should be paid in as a pledge and at the expiration of the insurance was to be returned to the member. In addition each member was to pay 1*s.* 4*d.* for every £100 of insurance for the expenses of administering the Society. Some mutual association of a later day which made inadequate provision for loss payments and expenses might well have taken a lesson from the plans of this early mutual company. There arose at once a discussion between the private joint stock company, — the Fire Office, — and the Friendly Society, as to the respective merits of the plans. Dr. Barbon argued that there could be "no insurance unless there be a fund settled that is both certain and able to make good the loss." Whereupon the Friendly Society replied that "the Fund in the Fire Office is neither greater nor the Insurance cheaper than in the Friendly Society." The Fire Office officials appealed to the Crown for an order to compel the Friendly Societies to cease writing insurance, and after much discussion the society was ordered to refrain for a year from insuring property. After

obtaining Letters Patent the Society could operate every alternate three months. The Fire Office thus obtained practically for a time a monopoly. However, other organizations were soon formed both of a private and of a mutual character, so that the old Fire Office soon had considerable competition.

Early English Companies. — In 1710 Charles Povey, who as early as 1706 was underwriting and issuing fire insurance policies, organized the company of London Insurers, although the company was partly formed in 1709. This organization soon came to be known as The Sun Fire Office for insuring Houses, Goods, Wares, and Merchandise from Loss and Damage by Fire. Thus was established one of the oldest of present fire insurance companies, and it is to be noted that it insured goods, wares, and merchandise. The earlier companies had confined their activities to houses and buildings. This Sun Company, named such because of its use of a sun as a sign, wrote policies in the cities and towns of Great Britain, whereas other companies had confined their business to a more limited territory. Separate policies were required for houses and goods. The policies were in effect when signed by three or more members of the company of the insurers. No policy was for a greater sum than £500, but no guarantee was given that losses to this amount would be paid. The payment depended upon the amount of available funds. This fund originated from a payment by each policyholder of 3*s*. per quarter after the first quarter, when the payment was 4*s*., the one shilling being for the stamp tax. One shilling was reserved out of each quarter's payment to

constitute a fund, and within ten days of the close of each quarter all moneys so reserved were divided among the sufferers in proportion to their respective losses, not exceeding £500 on each policy. The articles in the agreement of this early organization contained many of the provisions of present policy contracts, such as notice and sworn statement of losses, and change of residence. The similarity of present fire and marine insurance policies to those of an early date is much greater than that of life insurance policies.

In 1696 there had been formed a purely mutual organization, the Amicable Contributors for Insuring from Loss by Fire, which soon came to be known as the Hand-in-Hand. This society confined its insurance at first to Houses and Buildings. In 1714 another mutual society, the Union or Double Hand-in-Hand, was formed, which insured the contents of buildings, thus supplementing the activities of the older Hand-in-Hand Society. Thus it will be observed that before the close of the first quarter of the eighteenth century, all the present-day types of fire insurance organizations were in existence, with the possible exception of the special mutuals, such as Factory Mutuals and other mutuals insuring risks in a single industry or business. That is, the stock plan, the mutual plan, private insurance and public insurance had been tried. Competition, as is the case at present, was keen between the stock and mutual organizations. Each endeavored by pamphlets, broadsides, and other methods to prove the superiority of their plan.

The Bubble Period and Fire Insurance. — The period

of speculation, exemplified in the South Sea Bubble and other similar ventures, had its effect on the development of fire insurance. Marine and life insurance were first used as a basis of such speculative ventures, but by 1720 similar organizations were based upon fire insurance. Companies were proposed with capital of £2,000,000, representing an enormous amount of capital for this time; many shares of stock were sold; the purchasers, as in the case of most of the other speculative companies of the period, often received no return. A pack of playing cards issued during the period with a verse on each card sets forth the follies of the period. The seven of clubs expressed the spirit of the times in reference to fire insurance in the following words:

> Projecting sure must be a gainful trade,
> Since all the elements are bubbles made.
> They're right that gull us with the dread of fire
> For fear makes greater fools than fond desire.

However, other companies of the best character were being formed. The Royal Exchange and the Corporation of London Assurance were chartered in 1721, although the former did not place its fire division in operation until a year later. Older organizations were changing their plans to meet the developing conditions. The Sun provided a regular joint stock plan which would produce a fund to guarantee the payment of its policies, and the London Assurance Corporation enlarged its classification of risks. However, of the twenty-one important companies formed between the opening of Dr. Barbon's office in 1667 to the formation

of the Liverpool Company in 1777, only nine existed in 1780. Among the more important companies of these nine, the following, with their dates of organization, may be noted: the Hand-in-Hand, 1696; the Sun, 1710; the Union, 1714; the London Assurance Corporation, 1721; the Royal Exchange, 1721; and the Liverpool, 1777.

In 1782, under the premiership of Lord North, the first regular tax on fire insurance was levied. This was a percentage duty on the sum insured.

Some of the English companies had by the close of the century opened offices on the Continent and in the United States, and by the middle of the following century they had property insured in the United Kingdom to the extent of half a billion pounds.

It has seemed advisable to devote the chief part of the discussion to the earlier history of fire insurance for the following reasons:

First, modern fire insurance had its genesis in Great Britain, and the development in the United States has been in many respects similar to that in England.

Second, in the early period practically all the present forms of fire insurance organizations existed.

Third, no organizations of any country operate over such a great part of the world as the companies of Great Britain. Their business is world-wide, a natural result of the extensive trade of England and the wide distribution of her domain and property of a movable character.

Early Insurance Organizations in United States and England. — In the history of fire insurance development

in the United States there are many points of similarity to its development in Great Britain. Early companies were patterned after those of England and in a number of cases adopted the names of the older English companies. Some of the more important English companies opened offices in this country and continue to the present time to have a large amount of insurance in the United States. In colonial days the condition of the country precluded any considerable development of fire insurance. Property values were small and with the exception of that employed in commerce were not of large amount in any one industry or at any one point. Population was sparse and widely distributed over a large area with little concentration of property values. The colonists largely relied upon mutual aid in case of fire, since force of circumstances produced a considerable amount of coöperation. The loss of the early settler's property, though often serious, produced no such important results as the loss of an individual's property does at present. This was largely due to the fact that few of them had a complex stock of goods and tools. Much of what they had could be replaced. The house could by the coöperation of the neighbors often be restored from the abundant building material at hand. There was little accumulated capital to form stock fire insurance companies or to pay premiums, partly due to the depletion of the little wealth by the Revolutionary War and other wars, but largely due to the newness of industrial activity. There was a limited amount of individual underwriting in the form of personal ventures similar to those which had existed in

England. This was especially true in the case of marine insurance, for this form of insurance was the first to develop to any considerable importance in this country. This was due to the relatively greater importance of ship building and the carrying trade in the early industrial history of the United States. Some of this early marine insurance business was written by the English companies and some by private underwriters in this country. Along the Atlantic seaboard, especially in the New England States, the early development of the carrying trade brought a need for marine insurance.

Character of Early Companies in United States. — In 1794 the Insurance Company of North America was incorporated, and in the same year the Insurance Company of the state of Pennsylvania. The chief business of these companies was at first marine insurance, although the former soon began to write fire insurance on houses and goods. It is interesting to note that the rate on brick houses was thirty cents per hundred for an eight-thousand dollar policy when insured for its full value. The rates increased for a larger amount of insurance. The rate on frame houses was seventy-five cents per hundred. The Philadelphia Contributionship had been formed in 1752 as a fire insurance organization. It adopted the plans of the English company, the Hand-in-Hand. The Philadelphia Contributionship refused to insure houses with trees in front of them, thus beginning a classification of hazards. Largely for this reason the Mutual Assurance Company was formed in 1784. It adopted for its sign a green tree. In 1794 the Baltimore Equitable Society was formed.

Each of these three companies conducted their business on the plan of perpetual insurance, that is, the single payment of such a part of the face of the policy as will by its annual interest earnings amount to a sufficient fund to pay all the annual losses. It is similar to the principle of the annuity in life insurance, since instead of annual payment to secure a stated sum in the event of a loss, a larger bulk sum is paid once for all in lieu of the annual payments.

The Mutual Insurance Company of New York, later called the Knickerbocker, was organized in 1787, and in 1806 the Eagle Fire Insurance Company, with a capital of $500,000, was formed. The companies formed in the different states in the early period were primarily interested in marine insurance. They were incorporated usually by special acts of the legislatures and in most cases were granted charters only for a period of years, as, for example, a period of twenty or thirty years.

Importance of Marine Insurance. — The merchants of the New England States, especially those of Massachusetts and Connecticut, were on acccount of their business much interested in marine insurance. Some of these were individual underwriters, others formed copartnerships, and in time separate corporations were formed to transact an insurance business, chiefly marine insurance. The Hartford Insurance Company was organized in 1803 to transact a marine business. The capital was $80,000, divided into $40-shares. The war of 1812 and the events leading up to it, especially the Embargo and Non-intercourse Acts, had a disastrous effect upon the shipping and trading of the United

States. This caused many of the marine insurance companies in the United States to fail. Others were saved from failure by changing their business to fire insurance. The Hartford Fire Insurance Company, one of the largest and oldest companies now doing business, was organized in 1810. This was a stock corporation, and, like most of such companies formed in the early period, had only a small part of its capital stock paid in cash. Notes and mortgages of the subscribers to the stock were taken in lieu of cash. The Ætna, another large and old company of the present, was organized in 1819. Its capital was $150,000.

These early fire insurance companies had little accurate data upon which to base premium rates. It is true the English and continental European companies had been transacting fire insurance for a number of years, but their rates and experience were only of general value to the American companies. The hazard or risk in fire insurance is quite different from that in life insurance since it is a resultant of many complex factors. The construction, the protection, the business carried on in the building, the climatic conditions, and many other factors, varying not only from country to country but also from risk to risk, affect the particular rate to be charged. These early fire companies could not therefore rely upon the European rates as could the life companies. There was a large element of risk for the incorporators of these early companies.

The officials of the company in the early days did much of the work which is now intrusted to experts and supplementary organizations. The board of di-

rectors passed upon the risk, and with the other officers spent much time in traveling to inspect properties and to appoint agents.

Early Foreign and Domestic, Stock and Mutual, Companies. — Previous to 1800 there had been organized in the United States about ten mutual, and four stock, companies, but by 1820 the latter class of companies had increased to twenty-six. Partly as a result of the ill feeling engendered by the war of 1812, and partly as a result of the increasing number of domestic companies, statutes were enacted in some of the states, especially in New York and Pennsylvania, prohibiting foreign companies from writing insurance. New York and Pennsylvania were the home states of the largest number of American companies. These prohibitory statutes continued in force in most states until the New York fire of 1835 compelled their repeal in order to secure for property owners sufficient insurance, since many of the domestic companies failed as a result of this fire.

The New York Fire and Fire Insurance. — The date of this New York fire (1835) may be considered as closing the first period in the development of fire insurance in this country. It was a period of experimentation. As the industrial life developed and property values increased, fire insurance began to be appreciated more for the service it could render, and the increasing wealth of the people made it easier for them to purchase insurance. Both stock and mutual companies were organized, with the former of growing importance in respect to the volume of property insured. The spirit of mutual help-

fulness, characteristic of all pioneer civilizations, often replaced the neighbor's house or barn and thus supplemented the work of the formally organized stock and mutual companies.

The New York fire was productive of several important results. In the first place, the failure of so many companies led to a demand that the state take action to compel the companies to maintain funds which would guarantee the payment of the policies. In 1837 Massachusetts passed a law requiring companies to accumulate such a fund. This may be considered as the first of the unearned premium laws, that is, a setting aside of a part of the premiums in a reserve fund.

In the second place it directed more careful attention to the rates which had been charged. There had been little classification of risks, and the experience was not analyzed to discover whether the rates on a particular type of building or class of property were too low or too high. In the third place this fire impressed the companies with the necessity of accumulating a surplus to meet unexpected, large losses, for no statutory requirement later enacted or now in force would provide funds sufficient to pay for the possible losses resulting from conflagrations.

New York in 1853 enacted a law which required a company to keep from 30 to 60 per cent of the unexpired or unearned premiums in a reinsurance fund. This was supposed to be such a fund which thus accumulated would be sufficient to reinsure the risk in another company, if any particular organization desired to go out of business. Other states followed the

example of Massachusetts and New York, and although there was considerable legislation proposed during this period, it was not until after the Civil War that any important legal restrictions and control was placed upon fire insurance companies. Charters of incorporation were easily secured and were liberal in their terms.

A fourth result of this New York fire was the impetus given to the organization of mutual companies. Since many of the stock companies had failed, the people not unnaturally reasoned that they might well provide their own insurance. In 1853, sixty-two mutual companies were reporting to the New York comptroller. These mutual companies made the mistake of attempting to cover the large field of the former stock companies instead of confining themselves to a restricted area. As a result many of them were short-lived, and the losses to the members were very great. Between 1849 and 1853 there was organized in New York alone fifty-four mutual companies, but of these only seven were in business in 1860. There have been these alternate periods of promotion and failure of the mutual plan of fire insurance, but it is safe to state on the basis of many years' experience that the mutual plan of fire insurance is limited to two types of organizations for successful operation; first, to the insuring of like property in a restricted area, such as farmhouses and outbuildings; second, to the insuring of like property of a single business, such as factories engaged in manufacturing similar goods, where there is good construction, inspection, protection, and use of the property.

theft, *fire*, shipwreck, fall of house, or any other mishap . . . then once, twice, and thrice but not a fourth time, as much help shall be given to them out of the goods of the Guild, as the Rector and Stewarts, having regards to the deserts of each and to the means of the Guild, shall order."

There is also some evidence that these Guilds were sometimes formed or developed into organizations whose chief purpose was the protection of the members' property.

In the fifteenth century there was found in Schleswig-Holstein an organization called Brandgilden, which probably developed from the earlier organization known as Brüderliche, which was formed to protect in general the property of its members. The Brandgilden were municipal organizations interested in mutual fire insurance protection.

In 1635 a petition was made to King Charles I of England for authority to insure property against fire losses but there is no record that a patent was issued.

Early Fire Insurance Proposals in England. — Three years later another petition was made to the King for letters patent for the term of forty-one years to establish a fire insurance organization. It was proposed to insure houses within the city of London and its suburbs at a rate of 12 pence per annum for every house yielding £20 yearly rental. Fire engines and watchmen were to be provided for every ward in the city, as well as reserves of water conveniently located for use when a fire occurred.

The modern fire department, the fire watchman, the

salvage corps, and water protection are suggested at this early date. The King referred the petition to the Attorney-General who considered the propositions " reasonable if the petitioners according to theyre offer be tyed to theyre limitations and that no man be pressed to come in to subscribe but every man left to his voluntary choyce."

In the petition, the proposer had agreed to deposit £5000 with the government, which should be increased until it amounted to £10,000. This sum was to be held by the government and be invested by it so as to earn £5 on the £100. This was a forerunner of the present deposit required of stock fire insurance companies by the state to guarantee the loss payments. The petitioners had also suggested compulsory insurance, hence the modification suggested in this particular by the Attorney-General. The King granted the petition and ordered the Attorney-General to prepare a bill, granting the desired privileges.

The contest between Charles I and Parliament was probably responsible for the failure of the proposal. After Charles II ascended the throne, a proposal was made to him for the formation of a fire insurance organization. The king favored the project and recommended it to the consideration of the common council of London. The council rejected the proposal " because they thought it unreasonable for private persons to manage such an undertaking, or that any one but the city should reap the profits of the enterprise." It will be observed that this was an early expression of the belief in government insurance, which in the United

States has only of late years been a subject for general discussion.

On the continent there had existed organizations for protecting property against fire. In 1753 there was published in Hamburg an essay on Insurance by one Magens in which it is stated that a "Fire Casse" had long existed in that city, which insured the principal houses to the value of 15,000 marks "to be paid in case of their being burnt."

The great London fire of 1666, which destroyed over eighty per cent of the buildings in London, did much to accelerate the development of fire insurance as a business in England. Immediately after this destructive fire many different proposals were advanced for insuring houses.

Dr. Nicholas Barbon, who had been "a leading builder of the city of Lond," opened in 1667 an office for insuring houses and buildings. This was a system of individual underwriting and was similar to that which already existed in marine and life insurance, especially in the case of marine insurance. Individual underwriting at this time was quite possible, owing partly to the difference in the amount of the premium received at that time in comparison with the small premiums now received. The amount insured on each risk was also usually small.

Many plans for insuring property were laid before the Council of London with a view of having the city assume this work. In 1681 the city council resolved "to undertake ye insuring of all Houses within the citv and Libertves."

In the meantime Barbon and some associates had organized in 1680 a joint stock corporation, known as the Fire Office, with a capital stock of £40,000. The premiums were based upon the rental value of the property; and on frame houses the rates were double those on brick, thus illustrating one of the earliest examples of schedule rating, although only the construction feature of the hazard was considered.

Early Discussion of Public *versus* Private Fire Insurance. — When the city of London decided in 1681 to insure property, discussion arose in respect to the merits of public and private insurance. Broadsides appeared, and the newspapers contained numerous discussions of the subject. The Fire Office issued a pamphlet of "Enquiry whether it be to the interest of the city to insure houses from Fire; and what advantage the insured may expect more than from the Insurance Office already settled." Many phases of the discussion are similar to those of the present day in reference to the respective merits of state and private insurance. The city of London retired from this particular venture after a year's experience. The Fire Office continued in business and in time came to be known as the Phœnix Office from its badge of a Phœnix in the flames.

Mutual *versus* Stock Insurance. — Soon, however, this private corporation was to have a competitor. In 1683 a proposal was issued "for securing Houses from any considerable Loss by Fire, by Way of Subscription and *Mutual* contribution." This was the first of the Friendly Societies and the real beginning of

modern mutual fire insurance. It will be understood from the preceding descriptions that the mutual principle of protecting members of a social group against the losses due to fire had long existed. But the mutual organizations which were now to be formed were characterized by more formal organization with specific duties and privileges on the part of its members. Each member of this Friendly Society agreed when they joined to pay not to exceed 30*s.* for every £100 of insurance. This sum was to remain in the members' possession, except that 6*s.* 8*d.* of every 30*s.* should be paid in as a pledge and at the expiration of the insurance was to be returned to the member. In addition each member was to pay 1*s.* 4*d.* for every £100 of insurance for the expenses of administering the Society. Some mutual association of a later day which made inadequate provision for loss payments and expenses might well have taken a lesson from the plans of this early mutual company. There arose at once a discussion between the private joint stock company, — the Fire Office, — and the Friendly Society, as to the respective merits of the plans. Dr. Barbon argued that there could be "no insurance unless there be a fund settled that is both certain and able to make good the loss." Whereupon the Friendly Society replied that "the Fund in the Fire Office is neither greater nor the Insurance cheaper than in the Friendly Society." The Fire Office officials appealed to the Crown for an order to compel the Friendly Societies to cease writing insurance, and after much discussion the society was ordered to refrain for a year from insuring property. After

obtaining Letters Patent the Society could operate every alternate three months. The Fire Office thus obtained practically for a time a monopoly. However, other organizations were soon formed both of a private and of a mutual character, so that the old Fire Office soon had considerable competition.

Early English Companies. — In 1710 Charles Povey, who as early as 1706 was underwriting and issuing fire insurance policies, organized the company of London Insurers, although the company was partly formed in 1709. This organization soon came to be known as The Sun Fire Office for insuring Houses, Goods, Wares, and Merchandise from Loss and Damage by Fire. Thus was established one of the oldest of present fire insurance companies, and it is to be noted that it insured goods, wares, and merchandise. The earlier companies had confined their activities to houses and buildings. This Sun Company, named such because of its use of a sun as a sign, wrote policies in the cities and towns of Great Britain, whereas other companies had confined their business to a more limited territory. Separate policies were required for houses and goods. The policies were in effect when signed by three or more members of the company of the insurers. No policy was for a greater sum than £500, but no guarantee was given that losses to this amount would be paid. The payment depended upon the amount of available funds. This fund originated from a payment by each policyholder of 3*s*. per quarter after the first quarter, when the payment was 4*s*., the one shilling being for the stamp tax. One shilling was reserved out of each quarter's payment to

constitute a fund, and within ten days of the close of each quarter all moneys so reserved were divided among the sufferers in proportion to their respective losses, not exceeding £500 on each policy. The articles in the agreement of this early organization contained many of the provisions of present policy contracts, such as notice and sworn statement of losses, and change of residence. The similarity of present fire and marine insurance policies to those of an early date is much greater than that of life insurance policies.

In 1696 there had been formed a purely mutual organization, the Amicable Contributors for Insuring from Loss by Fire, which soon came to be known as the Hand-in-Hand. This society confined its insurance at first to Houses and Buildings. In 1714 another mutual society, the Union or Double Hand-in-Hand, was formed, which insured the contents of buildings, thus supplementing the activities of the older Hand-in-Hand Society. Thus it will be observed that before the close of the first quarter of the eighteenth century, all the present-day types of fire insurance organizations were in existence, with the possible exception of the special mutuals, such as Factory Mutuals and other mutuals insuring risks in a single industry or business. That is, the stock plan, the mutual plan, private insurance and public insurance had been tried. Competition, as is the case at present, was keen between the stock and mutual organizations. Each endeavored by pamphlets, broadsides, and other methods to prove the superiority of their plan.

The Bubble Period and Fire Insurance. — The period

of speculation, exemplified in the South Sea Bubble and other similar ventures, had its effect on the development of fire insurance. Marine and life insurance were first used as a basis of such speculative ventures, but by 1720 similar organizations were based upon fire insurance. Companies were proposed with capital of £2,000,000, representing an enormous amount of capital for this time; many shares of stock were sold; the purchasers, as in the case of most of the other speculative companies of the period, often received no return. A pack of playing cards issued during the period with a verse on each card sets forth the follies of the period. The seven of clubs expressed the spirit of the times in reference to fire insurance in the following words:

> Projecting sure must be a gainful trade,
> Since all the elements are bubbles made.
> They're right that gull us with the dread of fire
> For fear makes greater fools than fond desire.

However, other companies of the best character were being formed. The Royal Exchange and the Corporation of London Assurance were chartered in 1721, although the former did not place its fire division in operation until a year later. Older organizations were changing their plans to meet the developing conditions. The Sun provided a regular joint stock plan which would produce a fund to guarantee the payment of its policies, and the London Assurance Corporation enlarged its classification of risks. However, of the twenty-one important companies formed between the opening of Dr. Barbon's office in 1667 to the formation

of the Liverpool Company in 1777, only nine existed in 1780. Among the more important companies of these nine, the following, with their dates of organization, may be noted: the Hand-in-Hand, 1696; the Sun, 1710; the Union, 1714; the London Assurance Corporation, 1721; the Royal Exchange, 1721; and the Liverpool, 1777.

In 1782, under the premiership of Lord North, the first regular tax on fire insurance was levied. This was a percentage duty on the sum insured.

Some of the English companies had by the close of the century opened offices on the Continent and in the United States, and by the middle of the following century they had property insured in the United Kingdom to the extent of half a billion pounds.

It has seemed advisable to devote the chief part of the discussion to the earlier history of fire insurance for the following reasons:

First, modern fire insurance had its genesis in Great Britain, and the development in the United States has been in many respects similar to that in England.

Second, in the early period practically all the present forms of fire insurance organizations existed.

Third, no organizations of any country operate over such a great part of the world as the companies of Great Britain. Their business is world-wide, a natural result of the extensive trade of England and the wide distribution of her domain and property of a movable character.

Early Insurance Organizations in United States and England. — In the history of fire insurance development

in the United States there are many points of similarity to its development in Great Britain. Early companies were patterned after those of England and in a number of cases adopted the names of the older English companies. Some of the more important English companies opened offices in this country and continue to the present time to have a large amount of insurance in the United States. In colonial days the condition of the country precluded any considerable development of fire insurance. Property values were small and with the exception of that employed in commerce were not of large amount in any one industry or at any one point. Population was sparse and widely distributed over a large area with little concentration of property values. The colonists largely relied upon mutual aid in case of fire, since force of circumstances produced a considerable amount of coöperation. The loss of the early settler's property, though often serious, produced no such important results as the loss of an individual's property does at present. This was largely due to the fact that few of them had a complex stock of goods and tools. Much of what they had could be replaced. The house could by the coöperation of the neighbors often be restored from the abundant building material at hand. There was little accumulated capital to form stock fire insurance companies or to pay premiums, partly due to the depletion of the little wealth by the Revolutionary War and other wars, but largely due to the newness of industrial activity. There was a limited amount of individual underwriting in the form of personal ventures similar to those which had existed in

England. This was especially true in the case of marine insurance, for this form of insurance was the first to develop to any considerable importance in this country. This was due to the relatively greater importance of ship building and the carrying trade in the early industrial history of the United States. Some of this early marine insurance business was written by the English companies and some by private underwriters in this country. Along the Atlantic seaboard, especially in the New England States, the early development of the carrying trade brought a need for marine insurance.

Character of Early Companies in United States. — In 1794 the Insurance Company of North America was incorporated, and in the same year the Insurance Company of the state of Pennsylvania. The chief business of these companies was at first marine insurance, although the former soon began to write fire insurance on houses and goods. It is interesting to note that the rate on brick houses was thirty cents per hundred for an eight-thousand dollar policy when insured for its full value. The rates increased for a larger amount of insurance. The rate on frame houses was seventy-five cents per hundred. The Philadelphia Contributionship had been formed in 1752 as a fire insurance organization. It adopted the plans of the English company, the Hand-in-Hand. The Philadelphia Contributionship refused to insure houses with trees in front of them, thus beginning a classification of hazards. Largely for this reason the Mutual Assurance Company was formed in 1784. It adopted for its sign a green tree. In 1794 the Baltimore Equitable Society was formed.

Each of these three companies conducted their business on the plan of perpetual insurance, that is, the single payment of such a part of the face of the policy as will by its annual interest earnings amount to a sufficient fund to pay all the annual losses. It is similar to the principle of the annuity in life insurance, since instead of annual payment to secure a stated sum in the event of a loss, a larger bulk sum is paid once for all in lieu of the annual payments.

The Mutual Insurance Company of New York, later called the Knickerbocker, was organized in 1787, and in 1806 the Eagle Fire Insurance Company, with a capital of $500,000, was formed. The companies formed in the different states in the early period were primarily interested in marine insurance. They were incorporated usually by special acts of the legislatures and in most cases were granted charters only for a period of years, as, for example, a period of twenty or thirty years.

Importance of Marine Insurance. — The merchants of the New England States, especially those of Massachusetts and Connecticut, were on acccount of their business much interested in marine insurance. Some of these were individual underwriters, others formed copartnerships, and in time separate corporations were formed to transact an insurance business, chiefly marine insurance. The Hartford Insurance Company was organized in 1803 to transact a marine business. The capital was $80,000, divided into $40-shares. The war of 1812 and the events leading up to it, especially the Embargo and Non-intercourse Acts, had a disastrous effect upon the shipping and trading of the United

States. This caused many of the marine insurance companies in the United States to fail. Others were saved from failure by changing their business to fire insurance. The Hartford Fire Insurance Company, one of the largest and oldest companies now doing business, was organized in 1810. This was a stock corporation, and, like most of such companies formed in the early period, had only a small part of its capital stock paid in cash. Notes and mortgages of the subscribers to the stock were taken in lieu of cash. The Ætna, another large and old company of the present, was organized in 1819. Its capital was $150,000.

These early fire insurance companies had little accurate data upon which to base premium rates. It is true the English and continental European companies had been transacting fire insurance for a number of years, but their rates and experience were only of general value to the American companies. The hazard or risk in fire insurance is quite different from that in life insurance since it is a resultant of many complex factors. The construction, the protection, the business carried on in the building, the climatic conditions, and many other factors, varying not only from country to country but also from risk to risk, affect the particular rate to be charged. These early fire companies could not therefore rely upon the European rates as could the life companies. There was a large element of risk for the incorporators of these early companies.

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rectors passed upon the risk, and with the other officers spent much time in traveling to inspect properties and to appoint agents.

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insurance, there are open to society many ways of reducing this economic cost under the present system. Among other aspects of the unnecessary cost of fire insurance the following may at this point be considered:

(*a*) The excessive losses by fire.

(*b*) The excessive competition in the business.

(*c*) The expenses of the business.

The Fire Loss. — The loss by fire in the United States and Canada has during the past thirty-eight years been $5,866,981,025, or an annual average of $154,294,237. This does not include the many unreported losses which in the aggregate have amounted to millions of dollars. When it is recognized that this loss represents a real and permanent destruction of capital which is only replaced by setting aside a part of the product of economic enterprise, the significance of it is apparent. To the extent that it can be reduced there is a clear gain, since the insurance organization merely represents in this connection an assessing agency to levy upon production this added cost. No other modern industrial nation incurs such a fire loss as does the United States, based either upon population, buildings, or value of buildings. The explanation of this large loss by fire is to be found in the following facts, which will in later chapters be discussed in greater detail.

(*a*) The character of construction in the United States. The abundance and cheapness of lumber make wood the most commonly used building material.

(*b*) The absence of strict laws governing the construction of buildings and their use. It has been and yet is difficult in most states and cities in the United

States to secure the enactment of laws and ordinances which require the proper construction and maintenance of buildings with a view of reducing the dangers of fires. The American idea of personal liberty is interpreted as a license to subject one's neighbor and the community to a risk of fire. Buildings are constructed with shingle roofs and inadequate walls; machinery is used and processes of manufacture or trade are carried on which have a high fire hazard; inflammable material is carelessly kept in the building; refuse is permitted to accumulate. All these and many other factors, contributing to the fire hazard, are yet to be found in almost any American city. Frequent fires are the rule and conflagrations are of periodic occurrence. Enactment of better building codes and the enforcement of careful use of buildings are opposed. If the charge for the insurance is advanced, the insurance companies are accused of monopolisitic activities. If a property owner with a better building is given a lower rate for his insurance, the insurance company is accused of discrimination. Improvement has come but very slowly. The American city has grown so rapidly and its property values change so rapidly from section to section of the city, that it has been difficult to build permanently. It has often been true that " to build and let burn " has been cheaper than to build permanently.

(*c*) The inadequate fire protection of American cities in the form of good water protection and fire departments. There may be no water protection or it may be of insufficient quantity and pressure. The fire department may lack sufficient equipment or be subject to

political influence in the appointment of its employees. In general the fire departments of American cities rank very high in personnel and equipment. Indeed, probably no other factor is more responsible for keeping the fire loss as low as it is. The enormous sums expended for these fire departments, high pressure water mains, and other fire protection agencies must be added to the fire premium in any calculation of the cost of fires.

(*d*) The enactment by many states of valued policy, anti-coinsurance, and anti-trust laws which tend to prevent a more rapid reduction of the fire loss. Each of these laws will be discussed later.

Insurance Companies and Fire Losses. — It is a popular error on the part of many that the fire insurance organizations are not interested in the reduction of losses by fires; that is, that they are beneficiaries from fires; that the more numerous the fires and the greater the losses, the greater the amount of their business. The complete answer to this question cannot be given until many phases of fire insurance are discussed, but one of the chief errors in the assumption may here be noted. In the first place, the facts are against the assumption, for it is well known that fire insurance organizations spend annually large sums directly and indirectly in an effort to reduce the loss by fire. In the second place it is not true on pure grounds of theory that the fire insurance companies are indifferent as to the fire losses. Fire insurance, like life and most other forms of insurance, is predicated on the law of averages, or the regularity of predictable phenomena. If there was no uniformity in construction or in the rules for the use of

buildings and if each were permitted to build wherever he pleased and use his building in any manner he pleased, the insuring of buildings in a modern industrial city would be impossible. Standardization and uniformity are necessary as a basis for calculating with any degree of certainty the costs of fire insurance protection. Such costs are, as will later be shown, far from absolutely accurate as to individual risks, for with all the possible uniformity and standardization which can be obtained, each risk has many elements which defy analysis for the purpose of calculating its contribution to the fire hazard.

In the third place the public does get the benefit of reducing the fire hazard, both because the laws of most states secure it for them, and also because the competition for business among the insurance organizations guarantees that for which the legal regulation of companies provides.

Is Insurance a Monopoly? — This leads to a brief consideration of the character of insurance as a business. Is it by its very nature a competitive or monopolistic business? There are in the first place many different organizations, including stock and mutual companies, competing with each other for the business of insuring property. Some are large and some are small. They have been organized and now operate in many different states. Each seeks to secure the most desirable business, that is, the business which has produced the greatest profit. If therefore any community or individual takes such measures as will reduce the risk of loss by fire to the property, no one company will be

able to secure and hold the business of that community or individual at a large margin of profit. There is no absence of competition for business, and the excessive competition has in fact at times resulted in great injury to individuals and to the business as a whole. This has occurred partly because there has not been equal bargaining power among large and small property holders and partly because the excessive rate cutting has sometimes led the lawmakers to enact legislation inimical to the best interests of the public. As the business is at present conducted, its very character induces excessive competition and this natural tendency is aided by mistaken legislation which has for its purpose the placing of a premium on competition by the companies. The laws of many states prevent the companies from coöperating in rate-making and in inspection work, from agreeing as to commissions, and in other ways coöperating, which, if done under the supervision of the state might very materially reduce the expenses of the business. Insurance is in many respects a business subject to the law of decreasing costs, but in an effort to secure the advantages or economics of this principle the companies are induced by the condition of the business and the character of the laws to make outlays which go far to counteract the possible advantages of this principle of decreasing cost with increasing business. A company must take poor and bad risks along with good risks. The agent who may represent several companies will not give one company all the good risks unless perchance he is for a time persuaded to do so because he is given a high commission, and if

this is done, this counteracts the advantage of getting the good risks. In practice, however, the agent cannot continually discriminate in this manner. The excessive competition, together with the character of the business and its present organization, explains the apparent large expense for its conduct. This expense element is from 35 to 55 per cent of the total outlay. This includes taxes and all other items of expense. The selling price of ordinary commodities includes the cost of raw material, the cost of preparation through many stages, and many middlemen's profit and wages. Insurance is itself a finished product, and the consumer pays in one price what corresponds to the original cost and all the various succeeding costs and expenses of other products. The expense seems larger partly because it is condensed at one point.

Competition and the Fire Cost. — Notwithstanding this fact of competition among the business units selling fire insurance protection, the chief factors determining the cost of the indemnity are beyond the influence of this competition. No amount of actual competition on the part of the companies for the business can materially affect the burning rate. This is the chief factor in the cost of fire insurance. The competing units find the cost very largely determined by factors beyond their control. For this reason many of the principles applying to the ordinary competing business do not apply to fire insurance. There are more elements of a static and permanent character over which the producer — the insurer — has less control than the producer in a normal competitive business.

It is true that a considerable field exists for the exercise of superior ability, such, for example, as the more careful selection of good risks, superior labor force — agents and other employees — the proper distribution of risks, and the careful investments of the accumulated funds, so as to yield the highest possible return. It is in these and related aspects of the business that the principle of competition in fire insurance finds its true field and justification. Yet the total amount required for the payment of fire losses and expenses is such a large part of the total amount collected, that the public is in no danger of being charged a monopoly price for the protection. When the subject of rates and rating is considered it will be shown that the forces of competition cannot be trusted to determine a large part of the charge for the pure protection. This is determined by forces outside of the fire insurance organization and should not respond to "the higgling of the market." The business is not therefore a purely competitive one in the common acceptance of that term. Its price does not change from season to season in response to the fluctuating conditions of demand and supply as in the ordinary competitive business. Nor can the business be said to illustrate completely the economic principles either of decreasing or increasing cost. There are many organizations with a small volume of business which have as low a unit cost of production as large organizations. Small mutual companies may have either large or small expenses. Likewise the unit of expense for different stock companies varies greatly. This is largely true because the personal factor and

chance play such important parts in the business of fire insurance. Carefully selected risks, efficiency in the organization, and well-invested funds have a powerful effect on the expense rates.

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CHAPTER III

THE BUSINESS ORGANIZATION OF FIRE INSURANCE

How Fire Insurance is Conducted. — Fire insurance may be conducted either as a public or a private business. The vast majority of it is conducted as a private business, and in the United States there are no important examples of public insurance. Nor do the national, state, and local governments usually insure public property; they rely on the taxation power for the money to replace public property destroyed by fire. In some cases local governing bodies such as township and school officials insure the public property under their control in the same manner as does the owner of private property.

Classes of Private Organizations. — The private insurance organizations are of three general classes: stock companies, mutual companies, and various associations such as individual underwriters, Lloyds, and interinsurance organizations. The stock companies may be either domestic companies or branches of foreign companies which operate in the United States and which on account of the statutory requirements of most states become practically domestic companies. These state laws require of the branch of the foreign company the maintenance of a legal representative in this coun-

try, the periodic valuation of their assets, and the maintenance of a fund to guarantee the payment of the claims. The investment of this fund is also governed in the same manner as those of domestic companies, that is, only specified kinds of securities may be purchased. Other regulations must be observed with a view of protecting the policyholders in this country. The foreign shareholders may advance additional capital in the form of assessments on their stock holdings at the time of large losses and thus protect their business in this country. In 1914 there were in the United States three hundred and one stock fire insurance companies and two hundred and ninety-five mutual companies. Of these stock companies, eighty were foreign companies.

How a Company is Organized. — The method of procedure in organizing a stock fire insurance company is usually prescribed by the special insurance laws of each state. If a company, organized in one state, desires to enter another state to transact business, it must comply with the laws of that state. Insurance is not interstate business, and it is therefore subject to the laws of each state. In organizing a company the first step is to provide the capital by the sale of shares of stock in the proposed company. In New York State the minimum full paid cash capital is $200,000. This capital must be maintained without any impairment. It is therefore necessary to have funds to establish the company and to provide a surplus. This is secured by selling the stock at such a premium as to provide this surplus for initial expense and as an operating sur-

plus. Frequently the stock is sold at a premium of 100 per cent; that is, for every one hundred dollars' worth of stock two hundred dollars is paid. After subscription to the stock has been obtained, the next requirement is a public advertisement of the fact that such a company is in process of organization. This notice is a public statement of the purpose, the name of the proposed company, the office address, and the names of the incorporators, which in New York must not be less than thirteen. No name can be used which is the same or so similar to a company in the state as is likely to cause confusion. After two weeks' notice, proof of these facts is made to the superintendent of insurance and the attorney-general of the state. The list of subscribers as well as other details of the proposed company is filed. A committee of the subscribers is selected under the supervision of the insurance superintendent, which calls for the payment of the subscriptions to the stock. These are collected and deposited. A meeting of all the subscribers to the stock is then called for the purpose of adopting by-laws and accepting the charter to do business which is issued by the state authorities. If 66 per cent of the subscribers accept the charter and by-laws, they become binding on the remainder, and stock certificates are issued to the shareholders. The stockholders then elect the directors of the company and select a president and possibly some other important officers of the company. A list of officers, directors, and other officials, together with other information regarding the organization of the company, is then sent to the insurance superintendent.

The Charter. — If all legal requirements have been met, the company is then issued a certificate, authorizing it to transact business. This certificate to do business is to be distinguished from the charter. The charter in New York State is issued for a maximum of thirty years, but a renewal is usually a matter of formality. The charter and the certificate issued to a fire company usually carry with them the right to issue tornado, earthquake, hail, explosion protection, sprinkler leakage, and automobile policies. This provision differs somewhat in different states. In some states, as for example New York, such a fire insurance company cannot issue ocean marine insurance policies unless its capital stock is at least $400,000.

The Board of Directors. — A fire insurance company has several important committees of its board of directors. Two of the most important are the executive committee, which has general supervision over the business policy of the company, and the finance committee, which supervises the investment of the funds. In most states either no deposit or a very small one is required to be made with the state. Some states require corporation security bonds, but it is coming more clearly to be recognized that the best protection to policyholders is in a careful inspection of the company's business, the periodic valuation of their assets, and other kinds of supervision. Most states limit the kinds of securities which may be held by a fire insurance company and also prescribe methods of valuing the assets which are made by the department of insurance from time to time.

Mutual Organizations. — In point of numbers the mutual associations are more numerous than stock companies, but the value of property insured in this class of organizations is less than that of the stock companies. There are three types of mutual societies; the local mutuals, the general mutuals, and the factory mutuals. The laws governing the formation and operation of these societies vary considerably in different states. Some states have little regulation over such organizations, while others require a certain amount of insurance to be secured before a charter is issued; the territory of operation is sometimes limited as well as the kind of property which can be insured.

Local Mutuals. — The local mutuals are usually formed by farmers of townships or counties and by property owners of villages to protect the property of the members. After a certain number of applications are received, the members secure authority from the proper state official to form the organization. A meeting of the subscribers is held and officers are selected. These usually consist of a president, a secretary-treasurer, and an executive committee. Either no salary or a nominal one is paid to these officials, except the secretary-treasurer, who in connection with his regular business looks after the details of the insurance society. No agents as such are employed, and often no funds are collected in advance as the stock company does. Meetings are held annually or semiannually. When losses occur money to pay the loss may be borrowed from a bank or some individual, and at the close of the year the losses are assessed upon the individual members on the basis of the value of

their insured property. In the case of the farmers' mutuals, the insured property usually is limited to farmhouses and outbuildings. The members of the association solicit their neighbors' insurance, and since an intimate knowledge of each other's business and property exists, the moral hazard is not great. The property insured is of a like character, and no important question of difference in risk, based upon the character of the property, arises. There is only a nominal expense of operation. In some cases the applicant for insurance pays a small premium at the time the policy is issued and gives a demand note for an additional sum. The individual liability may be limited or the members may be liable for all the losses of the company. Each policyholder is in a sense an inspector of risks and a guardian of the interests of the association.

When these mutual organizations limit their field of operation and secure the potential advantages of carefully selected risks and of small expense, their success is very great. If in the early years losses are heavy and numerous, the association is not likely to be successful, since frequent or heavy assessments lead to the withdrawal of members. The members have in the rates of insurance charged by the stock companies an easy method of measuring the success of the association. If the association does not furnish the protection at a lower rate than that which can be obtained from the ordinary commercial companies, it makes little or no appeal either to old or new subscribers. Such organizations have little expense, no taxes, and are therefore often able to secure their protection, when well managed

and when they have no unusual losses, at a lower price than that charged by the stock companies. Their small business is an advantage, as well as at times a disadvantage. On the one hand they save in the heavy overhead expenses of a larger company. On the other hand, if abnormal losses are incurred, it falls heavily on the members because they are few in number.

The town mutuals as contrasted with the farmers' mutuals are in some states more strictly regulated. Their chance of success is somewhat less than the farmers' mutuals because the property insured is located in small cities and villages which often have no or inadequate building laws and fire protection in the form of waterworks and fire departments. A considerable fire is not improbable, with the consequent result of a heavy loss and cost upon the members.

The stock mutuals or mutual associations operating over a considerable area have not so much to recommend them as the local mutuals. First, because the same care cannot be used in selecting the risks, and second, because the expense of operation is likely to be considerable.

Factory Mutuals. — The third type of important mutuals is that formed by the owners of factories or of particular business, such as druggists, lumber dealers, flour mill owners, or factories of a closely related character. The factory mutuals have become very important. The basic idea of the factory mutual system of insurance is that losses should be prevented instead of being distributed. Every policyholder is a member of the organization, and each society is con-

ducted by its members who are manufacturers. They may employ one or more salaried officials to manage the organization, but commissions, salaries, and overhead expenses of the ordinary stock insurance company are avoided. The system was founded in 1835 in New England by the Manufacturers' Mutual Fire Insurance Company, and at present there are twenty such large factory mutual organizations in addition to many smaller similar organizations. These companies, especially the larger ones, coöperate in the engineering and inspection work connected with the insuring of their properties. Substantial construction is encouraged, as well as the best possible devices and methods for preventing and controlling fires. Before an application for membership is accepted in the association a careful inspection of the risk is made. Certain improvements may be required in the risk before membership in the association is permitted. A blanket policy, that is, one covering all parts of the risk and stock of goods, is the usual one issued in these associations. A premium is ordinarily collected at the time of becoming a member, that is, when the policy is issued, and at the expiration of the contract that portion of the premium not used for the payment of expenses and losses is returned.

Advantage of Mutuals. — The rates do not vary widely for the different factories or members, although certain differences are necessary to meet the differences in types of factories and their use. These mutual societies have been on the whole successful. It is an example of coöperation in one of its best forms. Not

only has better construction of buildings and more careful use of them been greatly encouraged, but the result has been insurance at a small cost. The Arkwright Factory Mutual Fire Insurance Company, one of the oldest, returned during the years 1860 to 1910 eighty-four and one half per cent of the premium deposits to its members.

In the case of other mutual societies with members other than factory owners, such as the wholesale or retail druggists, or similar businesses, it may be stated that their success depends very largely upon the character of the managers. They have neither the marked advantages of the factory mutuals with a low construction and occupation hazard in their risks, nor the careful and close supervision of the local farmer's mutuals. Their risks are usually well distributed as to territory, but there is often a wide variation in the character of the particular risks both in their construction and use. The hazard of a particular risk is only partly determined by the character of the business. A wholesale drug house in one city may have a risk ten times as great as one in another city, although the business conducted may be practically identical.

Stock and Mutual Plan Compared. — It may be inquired after this discussion of the stock and mutual plan of fire insurance whether one is superior to another. It is impossible to be dogmatic. Each plan under certain circumstances has much to recommend it. Each has a proper field of application. The local farmers' and the factory mutuals have on the whole been suc-

cessful when properly limited as to territory and risk, and there is no reason arising out of the theory and principles of fire insurance why they should not be an increasing success. The member of a mutual society exposes himself to a large loss through his liability to assessment for any abnormal loss which may occur; yet when the farmers' mutual insures only farmhouses and buildings widely separated such heavy losses are not probable. Nor are such losses likely to be abnormal in the case of factory mutuals if there has been careful inspection of the risk before insuring it and its use after insurance, and provided further that an unduly large amount of insurance is not written on a single risk or in one location. That is, the single risk should not be a large percentage of the total amount of property insured in the organization.

Advantage of the Stock Plan. — When, however, all the possible advantages are stated for the mutual principle in fire insurance, there yet remains a large field of operation for the stock fire insurance principle. The advantages of the stock companies are very clear. The policyholder assumes no liability. He pays a stated premium and receives the protection. No assessment is made upon him, however great the losses of the company may be. The shareholders are the risk takers. The uncertainty which is connected with the potential loss by fire to most property is borne by the stock company for a consideration. The policyholder thus exchanges an uncertainty for certain protection. Many property owners will prefer this situation instead of assuming a risk. Then too it is impracticable to apply

the mutual principle to the insurance of all property. There are not a sufficient number of properties of like character to make possible the organization of a mutual society to insure each class of property. There is a very wide difference in the hazard of the same kind of property. Mutual insurance organization also depends upon a well-developed sense of coöperation, and this is absent in many people. At least the material advantages of coöperation must be very evident to persuade many to coöperate. In very large mutual associations the expense element is likely to increase, and this counteracts the advantages. Conflagrations which occur periodically in American cities would often seriously embarrass, if they did not absolutely prevent, the success of the mutual principle. It must not be forgotten that the cost of fire insurance is essentially a cost to be determined by future events. It is a thing sold at a price fixed in advance, that is, before the actual cost of production or cost to serve is known. It is a field of operation for the risk taker and there is no probability that the stock principle will not continue to play the most important rôle in supplying fire insurance protection. In 1914 there were operating in the United States three hundred and one joint stock fire and marine insurance companies and two hundred and ninety-five mutual organizations. In that year the total disbursements of the stock companies were $356,319,704, while those of the mutual companies were in the same year $42,615,354.

Several other types of fire insurance organizations are to be distinguished, although the preceding ones are by far the most important.

The Lloyds. — There are many different fire insurance organizations known by the name of Lloyd, but in all cases they are voluntary partnership. The name "Lloyds" arose from the practice in the seventeenth century of English insurance underwriters assembling at Edward Lloyd's coffee house. These insurers were individual underwriters and chiefly interested in marine insurance. In 1774 the Lloyds transferred their place of business to the Royal Exchange, where it has since remained. In 1810 Parliament appointed a committee to inquire into the character of their business, and the report was favorable to the Lloyds. In 1871 the Lloyds were incorporated by act of Parliament. The organization has certain rules which the members must obey, but the business of writing the insurance is on an individual basis and for the benefit of its members. Each member must deposit $5000 to the credit of the trustees of the organization, and if other than marine risks are underwritten, additional guarantees are required. As a business organization it resembles most nearly a stock exchange. Lloyds are chiefly interested in marine insurance, and in connection with this work, they collect and publish a vast amount of marine information through their publications, such as Lloyd-List and Lloyd's Register, the latter being a minute description of the construction and rating of vessels. Either as individuals or as a group they also write fire and other forms of property insurance. In the United States they secure business chiefly through the insurance broker. These Lloyd associations in England and in continental countries of Europe have in some cases very large re-

sources, and no question is usually raised as to the security of the protection which they give. However, the name Lloyds in the United States is usually associated with a somewhat different class of organizations. They are, like the early Lloyds, associations of individual underwriters. Some of them have been responsible, but many have been of a quite different character. The earlier experience with such associations was so unsatisfactory that many states have enacted legislation to govern their organization and operation. In New York State the legislation of 1910 and its subsequent modifications brought these organizations under more strict control. The lack of security arose from the fact that these associations were composed of individual underwriters, each of whom would agree to take a part of a risk or in some cases the whole of it. Manifestly the ability to make payments, when losses occurred, depended upon the personal wealth and credit of the underwriter unless some deposit from the individual or association was required. In 1914 there were operating in the United States thirty such organizations, known and reporting as Lloyds.

The domestic Lloyds which now operate do so either under a plan of unlimited liability, assumed by its members, or upon a specified liability assumed by each. The foreign Lloyds are not permitted to have agents to solicit insurance in some states, but nevertheless a certain amount of insurance is written by them in the states prohibiting their operation, just as insurance is not infrequently written in a company which is not admitted to do business in a particular state. It has

been found impossible to prevent this absolutely. The property owner is often willing to take whatever risk may be involved in collecting his insurance at the time of loss from a company which has no legal status in the state for the advantage of the possible lower rate at which the non-admitted company writes the business.

Surplus Lines. — The laws of some states make provision for what is called "surplus line of insurance;" that is, the law permits insurance to be written in "unauthorized companies" when the agent and the property owner make affidavit that it is impossible to procure sufficient insurance from the companies authorized to do business in the state. In the large cities, where property values are congested, especially in such a city as New York, there is always a certain amount of property "seeking outside insurance." It must be understood that in the large cities it is often difficult to obtain sufficient insurance, due to the fact that no company will take to exceed a certain amount of insurance on property in the congested districts. This is especially important in the case of mercantile stocks or contents as compared with buildings. Thus the situation may arise of a dearth of insurance in the city, just as there is often a surplus of insurance in rural districts.

Inter-insurance Organizations. — This suggests a second minor type of fire insurance organizations, viz., Inter-insurance Associations. These organizations have some of the characteristics of the mutual associations and some of the Lloyds. They are composed chiefly of merchants, associated for the purpose of collectively insuring each other. They are thus mutual in

character. Each merchant or member agrees to be liable for a certain amount, and in this respect they are like the Lloyds. They are thus both insurer and insured. Each member is, as it were, insurer in each risk that is taken. He is debited or credited with respect to the experience on each risk. Usually the premiums of the stock companies are charged, and the returns made on the basis of the experience in each risk amount to a partial return of the premium, although the return may not be, as is the case in mill mutuals, directly proportional to the premium. Like the mill mutuals these inter-insurers usually confine themselves to the higher class mercantile risks, that is, those of good construction, occupancy, and very commonly to those with a sprinkler equipment. These organizations are sometimes called reciprocal insurance organizations, or simply "reciprocals," just as the individual underwriters may be called Lloyds or simply "individual underwriters."

A recent type of organization is that where a number of companies will form a loose union to write certain lines of business, especially the sprinkler risks. Or a very large company may organize a separate company for the purpose of writing certain lines of business and to take from the parent company surplus insurance. These last two types of organizations have resulted from the competition of inter-insurance, mutual organizations, and Lloyds, which often took from the stock companies the best risks, or in some cases because the large company wished to control the whole risk instead of insuring it in some competing company.

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CHAPTER IV

THE METHOD OF TRANSACTING THE BUSINESS OF FIRE INSURANCE

The Internal Organization of a Stock Company. — What is said in this chapter refers chiefly to the business of the stock fire insurance company, since the mutual associations have not on account of their character any complex business organizations. After the company has secured its charter to form a company and its license to write insurance, it elects its board of directors, who select the president and other important officials. There may be several vice-presidents, each in charge of a particular department of insurance when the company writes several different kinds or " lines " of insurance; or these vice-presidents may be assigned to other divisions of the business. The board of directors through its committees concerns itself chiefly with the financial aspects of the business. The detailed work of selecting, inspecting, and supervising property to be insured as well as the adjusting of losses is delegated to other officials and employees with the technical knowledge which is required to transact this part of the business.

Necessity for an Initial Surplus. — A fire insurance company must for reasons to be explained later accumulate funds, and the investment of this money requires

skill and foresight. The funds under their care are normally not as great as those of life insurance companies since the character of the fire insurance contract is different from the life insurance contract. No such large funds belonging to policyholders are held, but the directors and officers must not only be prepared to meet the current claims resulting from losses, as in a life company, but they must also be in position to pay the unexpected losses, due to conflagrations or to unfavorable general experience in some section of the country. A life insurance company can always know in advance with a large degree of accuracy how much it will be necessary to pay out in losses during the year, and hence can invest its funds on the basis of this reasonable certainty. But a fire insurance company cannot know its future losses. Its losses may fluctuate considerably from year to year, and hence results the difference in the problem of investing its funds in order to have on hand this varying amount to pay losses.

Divisions of the Organization. — The business organization of a fire insurance company usually consists of the following divisions:

(*a*) The board of directors who with the president and in some cases the vice-presidents are the managers of the business.

(*b*) Home Office and branch office employees, who are concerned with the details of handling the business after it is secured.

(*c*) The Field Force, composed of General Agents, Special Agents, Field Men, Inspectors, and Adjusters, who secure the business and settle the losses.

Home Office Organization. — The work of group (*a*) differs somewhat from company to company but its general character has been sufficiently indicated. The organization of the working force of group (*b*) is in a large company composed of several divisions or departments. Some of the most important ones are the examiners, the loss, the cancellation, the reinsurance, the statistical, the map and card, the abstracting, and the mailing departments. When a policy is received from an agent, or notice of its issue is sent to the home office, it is referred to the examiner's department for an inspection to see that the contract or form is correct; that the rate charged is proper, and that no other defect is present in the policy. If any such mistake is found, the agent is notified to change the policy, or if the defect is serious he is ordered to cancel the policy. In the process of examining the policy or form, the map department, the reinsurance, the abstracting, and other departments are called upon either for information or for the purpose of recording in the office the detailed information about each risk that is accepted by the company. Not only are all details of the risk itself made a matter of record, but also the credit of the owner as disclosed by a reference to such mercantile credit agencies as Dunn or Bradstreet. In short, it is the purpose of this examining department and allied departments to make certain that all policies conform to the laws of the state and to the practice of the company in every respect. Any one of many hundred provisions may have been neglected: the rate may be too low; a permit to use a hazardous device may have been omitted; the property may be in a congested district in which the

company already has its maximum amount of insurance; the risk may have been written in the territory of another agent. Whatever is abnormal in the risk is supposed to be discovered, as the proposed policy or form passes through the various departments for inspection.

The Field Force. — It is the Field Force upon which the company must depend for its business. The fire insurance agent, especially the local agent, occupies an important place in the transaction of the business. It is the agent who comes in contact with the insured, selling for the company the commodity and often rendering large service to the insured in adjusting and paying the loss. The agent is legally the representative of the insurer but in practice he often renders valuable service to the insured.

Power of the Early Agents. — In the early history of fire insurance there were no agents, the business being transacted directly with the company through the home officers. This method had been in practice in the European countries, where it is yet very general, and its adoption by the early companies in the United States was a natural one. The European companies now operating in this country use, however, the agency system of the domestic companies. As the business of the early companies grew in volume and in its distribution over a wide area, the practice of appointing local agents as representatives developed. The agent in the United States had, however, little authority before 1850. He received the application, which was sent to the company, whose officials accepted or rejected it. The agent at first usually

represented but one company and devoted but a small part of his time to the business. He had a regular business and his insurance agency work was supplementary to this. Many examples of this type of an agent are yet found in the villages and the rural districts. However, as the cities increased in population and in property values, the local agent sometimes found he sent to his company a greater number of applications than they were willing to accept. That is, there would promise to be too much at risk in a single place either on account of the volume of business or because some of the risks of the agent were very hazardous. The agent therefore made arrangements to represent other companies, with the result that an agent may now represent several companies among which he distributes his business. The increase in the number of companies and the resulting competition for business also furthered the tendency of the agent to represent several companies. The new company often preferred to appoint a man who was already an insurance agent instead of one who had no experience and no business to distribute.

Relation of Agent to the Company and Policyholder. — The policies of fire insurance run from one to five years, and hence an agent has policies continually expiring. Their renewal in one or the other company would depend partly upon the inducements which were held out to him in the form of commissions. The policyholder very seldom buys fire insurance in a particular company; that is, he does not usually specify a particular company. He purchases it from an agent, who places it in one of the several agencies which he represents. Probably a major-

ity of policyholders in fire insurance companies could not tell without investigation with what company their insurance is.

It is important to understand the position which the agent occupies both with respect to the fire insurance companies and to the policyholders, because these facts are at the basis of many of the problems in the business, such, for example, as the commission, the rate, the brokerage, and other questions.

As the business of the companies developed, two other classes of agents were appointed, viz. the General Agent and the Special Agent. The general agent was appointed only for the most important centers and was given charge of the business in a large section of the country.

Special Agents. — The special agent or field man was appointed with the growth of the business. These special agents are direct representatives of the company. They travel over the territory in which the company writes business, calling upon the local agents, aiding them in their work, and acting in general as a link to unite the home office and the field work. In the earlier period, when there were no schedules or rates of charges for insuring property, these special agents had much to say about the rates to be charged, either by their coöperation with the local agent or with the associations of local agents. These special agents later formed associations such as the New England Exchange, formed in 1883, the Underwriters Association of the Middle West, and other similar organizations. The membership in such associations was purely personal. The chief object was to preserve harmony among companies, their agents, and the

public. They did not directly concern themselves with the commission of agents.

In the fire insurance business friction among companies and agents has not been infrequent. Competition for business is so active that there is always a temptation to cut rates of commissions. As the number of agents increased and as rates were wholly a matter of underwriting judgment, their fluctuation was often very marked.

In 1866 the National Board of Underwriters was organized. It had for its purpose the establishing and maintaining of a system of rates of premiums, the organization of local boards of agents, the promotion of harmony among the insurance interests, the suppression of incendiarism, and the encouragement of sound underwriting. Between 1866 and 1877 the National Board of Underwriters established and controlled the rates of premium charges, but in 1877 this power was transferred to the local boards, subject to the restrictions of the companies. This Board also tried to secure uniform practices in regard to the commissions paid to agents and brokers. By 1882, when the conditions in reference to commissions had become demoralized, the attempt was abandoned.

Organization of Agents. — As the number of general agents increased, organizations composed chiefly of them were formed. In 1879 the Western Union was formed. This organization was composed of the officials of the companies and concerned itself with commissions and rate-making. Expert rate-makers were employed for this purpose but in 1897 the power of rate-making in this

territory was generally transferred to special rating bureaus or inspection bureaus. In some states, laws had been enacted which prohibited the companies from agreeing upon rates through their associations in these Unions. The Western Union had included all states west of Ohio, Kentucky, and Tennessee to the Rocky Mountains. These associations made up of competing companies seemed to the legislatures a method of restricting desirable competition. Some companies had not been members of these Unions which were formed, and these were called non-union or non-board companies. These companies were not bound by the agreement of the Union companies to observe the uniform rates and commissions paid by the Board companies. Other unions were formed in other sections of the country. In twenty-four states where joint action is prohibited on the part of companies in rate-making, the Inspection or Rating Bureaus do this work and sell their service to the companies. The Unions still exist in different sections of the United States with their territory of operation delimited. They concern themselves with matters of general interest to the companies which are members of the Union. Whether the rates are made by representatives of the company or by the independent rating bureaus, the state has developed a large measure of supervision over the charge for fire insurance. Rates are therefore made by the company itself, by representatives of a number of companies in a Union which works with the local associations, or by the independent bureaus.

In addition to these associations of agents, there are many local associations of underwriters. These have

little actual power over rates or commissions. They are formed to encourage proper methods of conducting the business, to further a more intelligent understanding of fire insurance, to reduce the fire loss, and for a variety of other purposes.

The following classification shows the different types of Underwriter Associations.[1]

CLASSIFICATION OF ASSOCIATIONS

According to —

- (1) Jurisdiction
  - National
  - Sectional
    - Urban
    - Suburban
  - Local
    - Urban
    - Suburban
- (2) Functions
  - Technical and educational regulation of brokers and agents and rate-making
- (3) Membership
  - Occupation of members
    - Company representatives
    - Special agents
    - Agents and brokers
    - No distinction between members
  - Classification of members
    - Classified membership
      1. Without qualification of voting power
      2. With qualification of voting power
  - Requirements
    - Adherence to agreed commissions to agents
    - Adherence to stated scale of brokers' compensation

[1] A survey and classification of Fire Underwriter Associations in the United States. Robert Riegel, *The Economic World*, Nov., 1915.

The following outline indicates the composition and field of operation of some of the more important Underwriters' Associations.[1]

Date of Organization	Name of Association	Extent of Jurisdiction	Functions	Membership Composed of
1866	Natl. Bd. of Fire Underwriters	National	Educational work Technical studies	Companies
1879	Western Union	Sectional	Formation of local boards, regulation of agents and supervision of rates	Companies
	Eastern Union	Sectional	Regulation of agents, promotion of good practices	Companies
1897	Underwriters' Association of the Pacific	Sectional	Regulation of brokers and agents, promulgation of rates	Companies
1889	Rocky Mountain Fire Underwriters' Assoc.	Sectional	Ditto	Companies
1882	Southeastern Tariff Association	Sectional	Ditto — Formation of local boards	Companies
1883	New Eng. Ins. Exchange	Sectional	Ditto	Special Agents
1883	Underwriters' Association of N. Y. State	Sectional	Ditto	Special Agents
1883	Underwriters' Association of the Middle Department	Sectional	Ditto	Special Agents
	N. Y. Fire Ins. Exchange	Local	Regulation of brokers and agents, promulgation of rates	Agents and Brokers
	Philadelphia Underwriters' Association	Local	Ditto	Agents and Brokers

[1] A Survey and Classification of Fire Underwriter Associations in the United States. Robert Riegel, *The Economic World*, Nov. 1915.

The Work of the Agent. — The agent is therefore a very important part of the fire insurance organization. It is he who decides upon the risk, although the company has the right of review. But the company is dependent upon him for the amount and kind of business which it receives, and in a large sense for the terms upon which the business is written. He has it very largely in his power to make or mar the company. It is to be understood that he, unlike the life insurance agent, has the power to issue a policy, although it may later be canceled by the company. He controls in a purely personal manner a large amount of business which he may give to one or the other of the several companies which he represents. The policies being for a period of from one to five years are continually expiring and he may shift the business from one company to another if he is not satisfied with a particular company. He may cease writing business for a particular company, and this company will often find it very difficult to keep this old business. The agent will probably be able to take it with him to his new company, for his business is largely of a personal character. Most companies are therefore anxious to cultivate the good-will of the agent because of his relative independent position with respect to any one company. Legally the agent is the representative of the company, but because of the personal character of his business, he is solicitous of the insured, whose business he desires to control. He is therefore continually anxious to satisfy the insured with respect to charges, policy provisions, and settlement of losses.

This peculiar agency relationship explains much of the

conflict in the fire insurance business among the three parties to the contract, the insurer, the insured, and the agent. It is remarkable that the system meets with as little friction as it does. On the one hand companies are anxious to secure representation, and it is not difficult to secure an agency contract. Agents are equally anxious to secure a large number of companies to represent, and often they play one company off against another. Property holders are anxious to have insurance at the lowest possible rates, and the competition of the companies with each other for the agent's business not infrequently led to rate wars, to insuring bad risks at low rates, and to other evils of a system of excessive competition. If the number of companies and agents were materially reduced, and if coöperation in rate-making, commissions, and other matters were enforced under the supervision of the state, property holders would probably secure their fire insurance at a lower cost.

The local agent makes an abstract of every policy he writes, and sends it to the company in the form of a daily report. This daily report includes all the detailed information in reference to the risk, and forms the basis of acceptance or cancellation of the contract by the company, although in the meantime the property owner is protected, since the power of issuing a policy is incident to the agency powers of the fire insurance agent. This daily report is therefore necessary in order to protect the company. At the close of each month the agent sends to the company a statement of all business transacted during that period, and settlements with the company from the agent are usually based upon the monthly

business. The agent also has power to cancel policies. This may be due to a change in the risk, not permitted in the policy, to the discovery of a moral hazard, or to other causes. Notices of these canceled policies are also sent to the company.

The Multiple Agency System. — A recent development in the agency system and one which has caused marked difference of opinion between the company and the agent is the multiple agency system. This is the system under which a single company will have in the same city or town two agents, that is, two distinct representatives who are authorized to write risks for the same company. The second agency may be either an individual agent with his subagents or in some cases an organization such as an Underwriters' Association. This development is another product of the excessive competition which characterizes the business of fire insurance. Its relation to competition is both of a positive and negative character. In a positive sense it increases competition in that two distinct agencies of the same company are induced to adopt all the methods and devices of the excessive competition among companies, which in many respects expresses itself as a higher charge for fire insurance. This is ultimately borne by the public. Divided responsibility of the company to the policyholders is created. Discrimination is encouraged. Carelessness in writing risks is induced. The overhead expense of transacting the business is increased.

The negative aspect of the multiple agency system is found in the fact that it gives an added advantage to

the large company over the small company. At present about forty-three per cent of the fire, marine, and tornado business is transacted by twenty companies. The public has been insistent that a larger number of companies be in business and has sought in many ways — most of which have been ill-advised — to encourage the organization and operation of additional companies. It will be shown later that the large fire insurance companies have in some respects marked advantages, but there are also good reasons to encourage the existence of small companies or at least to prevent the undue concentration of the fire insurance business. Notwithstanding the great financial strength of the large companies, there is such a concentration of property values in the American cities and the possibility of a conflagration is so real that the financial strength of the largest company may be jeopardized when the business is not properly distributed. Then too there are examples of small companies, — mutual and stock, — which transact their business at a low unit cost, and no assurance can be given that the public would secure better or cheaper protection by having a few companies transact all the business.

Oregon passed a law in 1909 prohibiting the multiple agency system except in certain circumstances, and the present attitude of the public mind towards the fire insurance organizations is such that it will not readily permit an undue concentration of the business in a few companies.

The multiple agency system not only encourages the wrong kind of competition in fire insurance and dis-

courages the desirable kind, but it also decreases the already too meager responsibility of the agent to the property owner.

The Broker. — In addition to the insurance agent, there is another class of fire insurance solicitors. These are called brokers. The broker is not appointed by the company. He solicits insurance from property owners and sells to the companies the risk, receiving as his payment a commission or brokerage. Brokers are found only in the larger cities, and in some of the largest cities most of the business is controlled by brokers. The service which the broker renders is analogous to that of the agent, especially from the viewpoint of the insured. He is not, however, in a legal sense the agent of the insurer, but of the insured. In a large city where there is a surplus of insurable property, it is sometimes difficult for property owners to find insurance. The conditions of the risk and its surroundings are often very complex. The schedule of rates is difficult to understand by the property owner. The broker is often the expert for the insured; he inspects his property, suggests changes to be made to secure a lower rate, and renders to the insured various services in addition to securing his insurance. To render this complex service requires a considerable office force, and this can only be supplied by the larger brokerage offices, with the result that most of the business in large cities is controlled by these large offices. This is the description of the brokerage system in its best form. There are in addition many hundred independent single brokers who solicit insurance and place it through the large broker's office,

or directly with the companies. Brokers of this class are especially likely to encourage undesirable competition for the business, and often do not render satisfactory service to the property owner. These small brokers are really insurance solicitors, and the "brokerage evil" arises chiefly in connection with their operation. It is difficult to secure agreements to comply with uniform practices in transacting the business. No capital is required to enter the business, and consequently some undesirable men are drawn into it. There are many examples of brokers who render excellent service. On the other hand, there are others who are interested only in the commission and are often guilty of unfair conduct both to the public and the insurance company. A small percentage of brokers give their full time to the work. They lack the esprit de corps of the business. They secure the risk and sell it to the company at the lowest possible rate. They then let the policyholders and the company look after their respective interests. They secure the full and often the unfair advantages of competition in the business. The companies themselves have not always been free from criticism in producing whatever evil there is in the present situation, since it has sometimes happened that a company will do business with a broker, disregarding its regularly appointed agents. This results largely from the excessive competition which has existed among companies. No general approval or condemnation of the brokerage system can therefore be given. Where the brokers have a large office force and where they render the service of an agent, that is, serve both the policyholder and the company

in ways other than simply writing the policy, there can be no great objection to them.

In some states brokers are licensed, and are thus made more responsible. So far as the actual work of the best brokers is concerned, his services to the insured are not greatly different from that of the agent. But their relation to the company is different. In a sense the company cultivates the agent. A broker cultivates the insured and to a less extent the company. A broker has a risk and seeks to get the best terms from many companies. An agent has many risks, and also distributes them among the companies on the basis of various considerations. A broker may have one or more risks too large for any one company to accept, and he may not easily find a buyer for all his risks. The agent is not in this position. If a company is disposed to be too independent with an agent in accepting the risks which are offered to it, the agent may cancel his agency contract and secure other companies to represent. This is likely to be especially true in the smaller cities and the rural districts where there is a surplus of insurance, and it is in these cases where the agent is most important, since brokers are found only in the largest cities.

Steps in writing a Risk. — The process of writing a risk by an agent is comparatively simple. He solicits the insurance, and consults his notebook for rates and rules, if he does not know them. If there is no rate, he consults with the district superintendent, agent, or rating bureau to get a rate. He then issues a policy in one of the companies which he represents. He has in his possession the policies which are already signed and become

effective so soon as he issues them. The agent then reports the fact to the company in his daily report, which is a notification to the company that liability has been assumed. An abstract of the policy is sent to the company for examination. The company may find some reason to order the policy canceled. If it does not, a complete record of the risk is made, and in time, usually regularly on a monthly basis, the agent receives his commission.

Commissions. — The subject of commissions has been one of great difficulty throughout the history of fire insurance. The problem has several phases to it. One aspect is, how much commission should be paid, — a question upon which the agents and the companies have disagreed. Another phase is, shall commissions differ in amount for different classes of business. Another phase is, how can companies be induced to pay the same grade of commissions to agents for the same kind of business. Still another phase is the public one; that is, the interest which the public has in keeping down the expenses by limiting commissions to a fair amount and also in having uniform commissions to avoid unjust discriminations among the buyers of insurance.

The percentage of net expenses to net premiums written by the joint stock companies reporting to the New York Insurance Department was in 1914 forty-three and fifteen hundredths per cent, and by far the largest item in this expense is the commission to agents. The public is therefore interested not only in the amount paid for commissions, but also in the manner in which it is paid. Many of the companies have endeavored by agreement

to establish fifteen per cent as the normal commission to be paid to agents on the ordinary business and in all territory other than that of the large cities. This was the practice of the board or union companies, that is, companies which were members of the various unions which were formed for this and other purposes. However, some of the largest companies have refused to be bound by these agreements, and other newly organized or small companies did not observe the practice of the board or union companies. These companies might offer higher commissions, and since the agent's reward for his work is in commissions alone, this appeal to him has often been successful, with the result that chaos has often resulted in the matter of commissions. Often the companies offering the higher commissions would require the agent to give to them only the better risks under his control, and this added greater confusion. The higher commission became an inducement for the agent to discriminate among the companies. Some companies would have an unduly large number of poor risks, and this in final analysis expressed itself in a higher rate for the property holders, in addition to producing an unfavorable return for the stock owners of the company. These high commissions may also have caused an increase in the number of agents, and in any event they made it difficult to preserve uniformity in paying for the work of the agent which, by its charatcer, does not justify any such difference. It was one of the purposes of the Unions to secure this uniformity but they have not completely solved the problem. These board or union companies agree upon a scale of commissions varying from 15 to 25

per cent, according to the class of business, except in the case of the larger cities. In general the plan is to allow the agent these graded commissions on condition that he does not accept an agency for a non-union company. If he reserves the right to represent one of these non-board companies the commission is fixed at 15 per cent with an allowance of one per cent for expenses. In some of the territory of the unions, an agent is not permitted to represent one of the non-union company companies. Commissions have not therefore become standardized and probably will not so become, until the companies are compelled to coöperate in this and other related matters of fire insurance in which the public is vitally interested. Indeed there has been a disposition to apply the anti-trust laws to the companies to prevent them from agreeing upon commissions and rates. The public has been disposed to think that the greater the competition among the companies, the greater the public benefit. But no other one thing has been so responsible for the high expenses of companies as the unregulated competition which has characterized the conduct of the business. The non-union companies are larger in number but in volume of business they are far below the union companies. It is also true as a general statement that the union companies are the strongest and most conservative.

Are Commissions too Large? A favorite method of securing business by a fire insurance company has been to cut rates and increase commissions just as in the early days of the railways, the traffic was often solicited by a reduction in charges below a normal point. It has also

been argued in some of the reports of legislative committees which have been appointed to investigate fire insurance as well as in some reports of Insurance Commissioners, that the commissions on certain classes of risks are too high. This usually refers to such risks as dwelling houses, sprinkler risks, and public buildings upon which the loss ratio is often lower than on the ordinary risks. This may be true, but until there is a more detailed analysis of the total experience on different classes of property as a whole, it is difficult to prove or disprove the assertion.

Contingent Commissions. — Another aspect of the commission question which is of increasing importance is that of contingent commissions as contrasted with flat and graded absolute commissions. The contingent plan of paying commissions is one under which the agent receives a flat commission at the time of writing the risk, and an additional commission, based upon the fire losses of the risks he writes, that is, contingent upon the profits of the agency. The purpose is clear when this method is compared with the present plan of paying flat commissions. It would place a premium upon the carefulness and fidelity of the agent to the interests of the company. There are undoubtedly many agents who now use every care in selecting risks for insurance, but it must be admitted that there is in the present system much which offers an inducement to be careless and dishonest. The agent is supposed to protect the company against accepting unduly hazardous risks, resulting either from the character of the property or of the owner or occupier. If he refuses to write a risk, this means so much less commission for him. If the owner of the property wishes to

buy more insurance than the value of his property, the agent will receive a greater return, the larger the amount of insurance is. There is an ever present inducement for the agent to be dishonest, or at least to be irresponsible. Doubtless most of the fire insurance agents are not consciously negligent or dishonest on account of this fact, but it must be recalled that there are no especial qualifications necessary to secure an agency contract and that the agency force is very numerous with a considerable change in its composition from year to year. It is urged that this contingent commission plan would reward the careful agent, penalize the dishonest, and, what is most important, that it would secure a marked decrease in the abnormally large and unnecessarily great loss by fire.

On the other hand it is argued that the agents are not unfairly rewarded or as a class overpaid; that any plan of contingent commissions which puts at the risk of a fire a large part of the agent's commission would drive out of the business many of the best agents: that the fire insurance agents should be permitted, as are other citizens, to sell their services at the best possible price; that there is no more reason found to justify the regulation by law of the wages of the fire insurance agent than the wages of the rank and file of other wage earners.

There is no immediate prospect that there will be a general adoption of a contingent commission system of paying the agent.

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CHAPTER V

THE HAZARD IN FIRE INSURANCE

Hazard Defined. — The term "hazard" in fire insurance is used to include all those factors, personal and impersonal, tangible and intangible, which affect positively or negatively the chance of the property being destroyed by fire. When a class of property is said to have a high or low hazard, it is meant that each of the items in the class of property either on account of the construction material or the use to which it is put or for some other reason has such a high or low hazard as to make it representative of the group. The character of the hazards, therefore, determines the character of the risk from the standpoint of its chances of loss by fire. Hence it is the hazard which governs the rate of charge for protection. A consideration of hazards must therefore precede the discussion of the fire insurance rate.

The Hazard in Fire and Life Insurance. — The hazard in fire insurance is in many respects different from that in life insurance. Increase in age in life insurance means a higher charge for the insurance, but this does not necessarily happen in fire insurance. A loss is certain on every ordinary life insurance policy, but in fire insurance a loss may or may not occur. The factors determining the hazard in life insurance are much more static than

those in fire insurance. The hazard of a single risk in fire insurance may greatly change from month to month, from year to year. These factors are also more numerous in fire than in life insurance, and they are more beyond the control of the individual. The business of fire insurance is, like that of all insurance, based fundamentally upon the law of averages, that is, upon the assumption that the hazard in its largest factors can be measured and that there will be found a regularity in the phenomena. A fire insurance company by an analysis of its statistics over periods of years and in different sections of the country and on different classes of property finds that a certain amount of property burns each year. This regularity or average may be disturbed by conflagrations. There is nothing in fire insurance which corresponds exactly to the mortality table in life insurance, but the experience of companies shows a burning rate which, while fluctuating considerably from year to year and from place to place, yet affords a rough basis for establishing average results.

Notwithstanding that there is not any such definite norm in fire insurance as in life insurance, according to which the medical examiner judges the hazard of the individual risks, there are standards of measuring many of the hazards in fire insurance. The inspector or rater and other individuals who endeavor to analyze the hazard of risks in fire insurance do essentially what the medical examiner does in life insurance.

Classification of Hazards. — The most important and general classification of hazards are Physical and Moral. Before discussing each of these divisions, it is necessary

to recognize the effect on hazards of the elements of place and time. Since hazard has to do with the causes affecting favorably or unfavorably the burning rate, it is evident that the geographical location of the risks will affect this rate. This may be due in part to a difference in climatic conditions, to the absence of rain, to the prevalence of frequent high winds, to long periods of hot weather, or to any one of many factors which produce the higher hazard that is found in certain localities. The burning rate is likely to be higher in new countries and sections than in long settled regions. This can be explained in part by the character of the construction and other evident factors, but even after all allowance is made for the known factors, there is not infrequently left a difference which cannot be explained. The condition must be accepted as a fact. Selecting states at random and analyzing their burning rate over a period of years will disclose a difference that is difficult to explain. This has a very important bearing upon the rates or premiums that are to be charged. The fire insurance companies have found it difficult to take into consideration this higher burning rate in certain states. Each state wishes to have as low rates as any other state, and few states have been willing to permit an increase of rates even when a conflagration has occurred in them. The property holders of Missouri may not understand why they should help to pay the losses of a Baltimore or a San Francisco fire, and as in most states, they are prone to resist any effort on the part of the companies to assess upon them the losses due to these conflagrations. Yet it is necessary to distribute this loss. Maryland and

California property holders cannot pay it, unless it is distributed over a very long period of years, and this is not practical. The stockholders of the companies cannot be expected to meet such unusual losses. The only practical and just method is to distribute it over a series of years upon all property holders. Nor should the people of Missouri object to this method. They have no assurance that a similar conflagration will not occur in St. Louis, when they will be very anxious to have property holders in other states aid them. The capitalist shareholder will not and cannot pay for these losses, and the only method is to distribute them. This illustrates again the mutual character in final analysis of fire insurance.

Without anticipating the future discussion of this topic, it may be said that a theoretical fair method of taking into consideration this difference in normal fire losses in different sections would be to establish the rate on the basis of the average or normal burning rate with an addition to take care of the conflagration losses which are likely to occur in any section of the country.

The Time Element in Hazard. — The time element in respect to the hazard is even more difficult to explain than the place element. It is true that certain months of the year show larger losses than others, but there is a fluctuation over periods of years which is not accounted for in whole by the conflagration losses. The following tables show this variation in losses with respect to the element of time.

FIRE LOSSES IN THE UNITED STATES AND CANADA, 1915

January	$20,060,000	July	$9,006,800
February	13,081,250	August	10,067,100
March	18,786,400	September	14,823,500
April	18,180,350	October	14,465,850
May	11,388,450	November	21,204,850
June	10,893,950	December	20,877,100

The following table shows the annual fire losses in the United States for forty years, 1875–1914, inclusive.

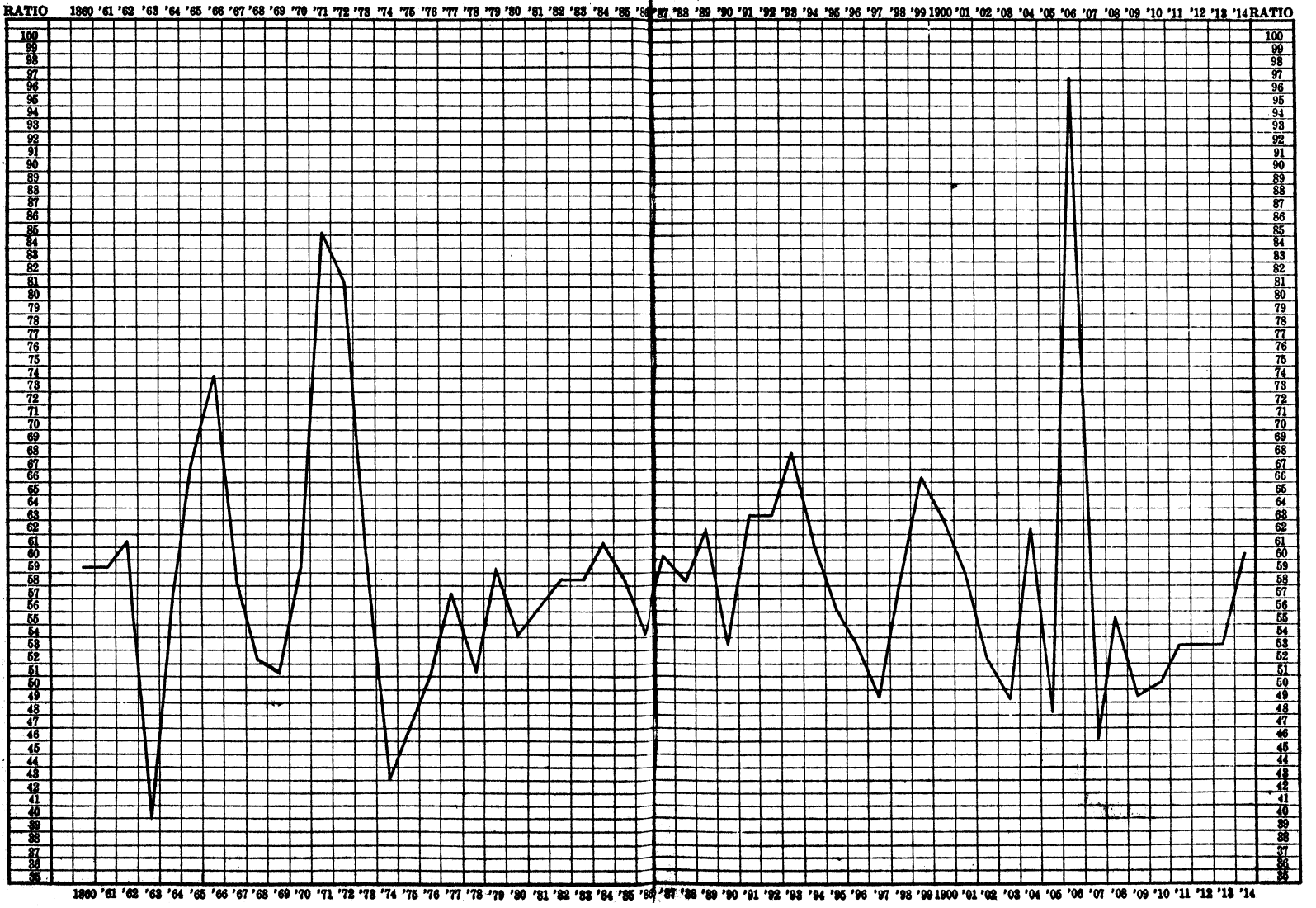
ANNUAL FIRE LOSSES IN THE UNITED STATES FOR FORTY YEARS — 1875–1914, INCLUSIVE[1]

Year	Aggregate Property Loss	Year	Aggregate Property Loss
1875	$78,102,285	1895	$142,110,233
1876	64,630,600	1896	118,737,420
1877	68,265,800	1897	116,354,575
1878	64,315,900	1898	130,593,905
1879	77,703,700	1899	153,597,830
1880	74,643,400	1900	160,929,805
1881	81,280,900	1901	165,817,810
1882	84,505,024	1902	161,078,040
1883	100,149,228	1903	145,302,155
1884	110,008,611	1904	229,198,050
1885	102,818,796	1905	165,221,650
1886	104,924,750	1906	518,611,800
1887	120,283,055	1907	215,084,709
1888	110,885,665	1908	217,885,850
1889	123,046,833	1909	188,705,150
1890	108,993,792	1910	214,003,300
1891	143,764,967	1911	217,004,575
1892	151,516,098	1912	206,438,900
1893	167,544,370	1913	203,763,550
1894	140,006,484	1914	221,439,350

[1] These figures are obtained from the Records of the Journal of Commerce, deducting the Canadian losses.

CHART OF LOSS RATIO FOR 55 YEARS

*** Showing Movement of Net Loss Incurred to Net Premiums Written.**



*** Previous to 1909 — Losses Paid to Premiums.**

The preceding chart, adapted from that of the forty-ninth annual report of the National Board of Fire Underwriters, shows the fluctuations of the loss ratio through a period of fifty-five years. Comparing this chart with the table of large fire losses or conflagrations on page 95, it will be found that the highest peaks are to be explained by these conflagrations. However, after all allowance is made, the fact remains that the changes in the burning rate in respect to time and locality are marked.

It is not to be concluded, however, that the law of averages and the principles connected with it are of no application in fire insurance. The chief difference between life and fire insurance in this respect is in the variation; that is, in fire insurance the burning rate is possible of less exact prediction than is the mortality experience in life insurance. There are many more extremely variable factors and more factors whose force cannot at all be predicted. These elements of place and time are not hazards but largely incalculable factors which affect hazard.

Physical Hazards. — The two classes of hazards have been stated to be Physical and Moral. Physical hazard may be subdivided into Construction, Occupancy, Protection, and Exposure hazard. It will be recalled that in the early history of insurance the chief hazard considered was the construction hazard. Buildings were divided into two classes, Brick and Frame. These two divisions are still used, but many elements in the construction other than the material of which the building is constructed are now considered in determining the nature of the hazard as affected by construction. Stone and

concrete are classed with brick construction, while frame, iron-sheathed frame, skeleton iron-clad and brick-veneered buildings are classed as frame construction. The important features in the construction which affect the hazard are the height, area, walls, roof, ceiling, skylights, openings through floors and partitions, chimneys, flues, exterior attachments, warerooms, character of construction, and conditions of the material of construction.

Height of Building. — The height of a building affects the hazard chiefly because of its relation to fire protection. A one-story building is more accessible for putting out a fire than one of many stories. The hazard does not, however, increase directly with each additional story. The absence of a basement affects the hazard favorably, since a basement is a place where refuse accumulates and where inflammable material is stored, in addition to the fact that a fire breaking out in the basement is likely to be transmitted rapidly to the upper stories. The greater the area of the building, the greater the hazard, because of the additional property exposed to burning. The walls affect the hazard both in respect to their thickness and to their prevalence or absence as division walls. Insufficient thickness in outside walls renders them liable to weakening by fires in adjoining buildings, and further, they become the means of transmitting fire. Likewise division walls act as a check to a fire which breaks out in a building. They also add strength in supporting the floors and ceilings of the building. The walls should extend above the roof of the building when there is danger of fire from adjoining buildings, since they act as a protection for the roof and roof structures.

The Roof. — The character of the roof also affects the hazard. The shingle wood roof so common in the United States has been a source of ignition in numerous cases, especially in cities and towns where the proximity of buildings has contributed greatly to the hazard from this source. Many kinds of composition roofing have come into use with the increasing cost of lumber and many of these afford good protection from fire. On a brick building, the slate, metal, tile, or one of these approved composition roofings is accepted as standard. The shape of the roof may also increase the hazard, as, for example, a frame mansard roof. Composition roofing should be used on the flat roof, as the tar which may be used in it is likely to run down on sloping roofs and expose the lower layers, thus increasing the danger of ignition. The character of the ceiling and wall covering also affects the hazard, since wood, straw-board, and canvas more readily burn than the metals used for such purposes. Skylights or openings in the roof may be an element of danger in the construction if not constructed of wired glass properly set in. Likewise the openings between the floors are important as a means of fire spreading from one floor to another. Elevator shafts and stairways become, unless properly inclosed, a flue to suck up the fire from lower to upper stories. Self-closing doors and inclosed elevator shafts are used to reduce the hazard from this source. The character of the material in the partition of a building or in the floor of a building, that is, whether of brick, metal, glass, wood, or wood and plaster, also affects the hazard. Defective flues and chimneys have been the cause of so many fires that their

proper construction for the purpose of reducing the hazard needs no discussion.

Exterior attachments as a source of hazard consist of such things as awnings, roof houses, wood cornices, and similar additions to the regular construction. Warerooms are often built of wood. The roof may be bad. Fire often occurs in these warerooms or storerooms and endangers the main building. Many other features of the construction favorably or unfavorably affect the hazard, such, for example, as how the floors are laid, the furnace room's construction, the foundation, columns, and beams for floor support, joist construction, and numerous other parts of the construction. Each constitutes its element of risk or safety.

Occupancy Hazards. — Occupancy is the second division of the physical hazard, and this refers chiefly to the kind of business transacted in the building, although the manner in which the business is conducted with respect to reducing the inherent danger of fire from the nature of the business is also important. If refuse, waste paper, wrapping material, and other highly inflammable substances are permitted to accumulate, an unnecessary element of risk is added to the normal hazard.

The occupancy hazard, considered in its relation to the material in the building, may be discussed in three divisions. First, as a medium for fire; that is, as an aid to fire both in its intensity and in spreading the fire when once it is started. Material may have low or high combustibility. Hardware, for example, has low combustibility, while hay has high; still other materials,

such as matches, are quasi incendiary. Second, as a cause of fire; that is, the character of the occupancy with respect to the probability of a fire being started. Buildings used for offices and banks have occupancies with a very little hazard, while buildings where industrial processes are carried on, such as cleaning and dyeing works, buildings with engines and machines in them, have a high hazard. Third, as an effect of fire; that is, the occupancy may be of a kind which is greatly injured in the event of a fire. This refers to the damage ability of the stock or occupancy. Wool ranks low, while millinery ranks high.

In the classification of occupancy hazards of the National Board of Fire Underwriters the following classes by groups are given. Non-hazardous, 1–100, Mercantile, 101–298, Manufacturing Specials, 299–600, Non-manufacturing Specials, 601–700, Miscellaneous, 701–800, Automatic-Sprinklered, 801–000. It will be observed that occupancy hazard is a subject of great importance in fire insurance and is analyzed in great detail.

Protection. — The third general division of physical hazard is protection. This is divided into two kinds, viz., public and private. This subject will be discussed in detail in the chapter on Fire Prevention, but at this point attention may be directed to its most important aspects as it affects the physical hazard. Public protection has reference to the waterworks, the fire departments, and the ordinances and laws of the city or state. Cities are classified according to the excellence of these features. One city may have a large water supply, adequate pumps, large water mains, high pressure

mains, a fire department with adequate physical equipment, the force carefully selected and free from political influence. It may also have a building code that prevents the erection of buildings which add to the fire hazard by requiring proper construction and maintenance. This is done in a variety of ways, such, for example, as preventing the use of shingle roofs, open grating on the sidewalk, and in many other ways. Private protection is concerned with fire extinguishers, watchmen, inside standpipes, sprinkler equipment, fire-escapes, automatic fire alarms, the use of fireproof paint, asbestos covering of pipes, and many other devices by which the protection against fire may be increased.

Exposure. — The fourth general division of the physical hazard is Exposure. This is an important element in the physical hazard on account of the fact that the larger number of buildings is exposed to a fire from other buildings. Little or no space exists between buildings in the cities, and even the width of the average street does not afford protection in the case of a large fire. The Analytical System for the Measurement of Relative Fire Hazard divides exposure into three classes, viz., radiated, absorbed, and transmitted; that is, a building may send out to other buildings a part of its own hazard; it may absorb a part of the hazard of an adjoining building; and it may transmit a part of this absorbed hazard from one side to another building on the opposite side of it. Manifestly the extent to which a building absorbs, radiates, and transmits a hazard depends upon the character of the fire protection, the character of the construction of its walls, and the ad-

joining walls, and upon the distance between the buildings. If the fire is kept in the building by means of good public and private protection, good walls, wired glass or iron-shuttered windows, the exposure element becomes unimportant. If, however, the fire escapes from the building, then the character of the adjoining walls, the protection of the openings in it, the width of space between the walls, each becomes of large significance. When the buildings are of different height or length, other elements such as the character of the roof and the openings in it assume added importance. A fire wall between two adjoining buildings or parts of the same building reduces the exposure hazard just as a wide street acts as a preventive to the spread of the fire. Each of these elements in the physical hazard — construction, occupancy, protection, and exposure — is minutely classified and is sought to be measured in the extent to which it contributes to the hazard.

The Conflagration Hazard. — There remain two other aspects of hazard which cannot easily be measured and receive their pro rata cost in the rates charged for fire insurance. These are the Conflagration and the Moral Hazard. The Conflagration Hazard refers to the abnormal losses by fire which periodically occur in the cities of the United States. Some of the largest conflagrations which have occurred in the United States are as follows:

1914	Salem, Massachusetts	$14,000,000
1908	Chelsea, Massachusetts	12,000,000
1906	San Francisco, California	350,000,000
1904	Baltimore, Maryland	50,000,000
1901	Jacksonville, Florida	11,000,000
1872	Boston, Massachusetts	75,000,000

1871	Chicago, Illinois	$168,000,000
1866	Portland, Maine	10,000,000
1861	Charleston, South Carolina	10,000,000
1851	San Francisco, California	25,000,000
1835	New York, New York	15,000,000

Since 1850 there have been in the United States seventeen other fires in cities in which the loss was between five and ten million dollars. In the same period there were two hundred and nineteen other fires in which the loss was from one to five million dollars. This conflagration element in the hazard introduces a difficult factor to measure and distribute in the charge for fire insurance. The preceding totals indicate what a large factor it is in the charge, but they do not indicate the difficulty of assessing the cost on policyholders. In the first place, these conflagrations cannot be predicted, for they do not occur with a stated regularity. In the second place each political division objects to having assessed upon it the past or prospective charges to meet the losses, incident to these conflagrations. Even if to secure the average loss, a long period of years is taken, the calculated loss over this longer period is likely to prove an unsatisfactory guide for the future, because the losses are not equal in these periodic conflagrations. As fire insurance is administered in practice, the companies accumulate a surplus, as well as they can and from wherever they can, to meet the heavy losses of conflagration. This is usually called a surplus, a subject to be discussed later; but if the public and the company would set aside a fund and call it a "conflagration reserve," there might not be so much misunderstanding as to the real purpose

and nature of the chief part of the surplus which a fire insurance company accumulates. It is essentially a liability, since only a small part of it, as judged by past experience in this country, is a potential surplus; that is, it is not a fund to be considered the final property of the stockholders. The stock principle of conducting fire insurance is in this connection seen to have unusual application. These large "surpluses" of the strongest stock companies seem to the legislator and taxing officials a proof of the ability of the insurance company to pay taxes, although the fund is very largely a liability.

Moral Hazard. — There is still another kind of Hazard, viz., the Moral Hazard. This is even less measurable than the conflagration hazard, since it relates to personal characteristics. The phrase "moral hazard" is used to embrace all those facts, known to the insured, which at the time of taking the policy and during its continuance result in a larger hazard than the insurer assumed for the premium paid for the policy. These personal factors cannot be reported, analyzed, or measured. The moral hazard expresses itself as carelessness in using the property or as criminal action in wilfully setting fire to the property, or in misrepresenting known facts, in overinsuring the property with the intention of setting fire to it, or in securing a lower rate than that to which the property is entitled. The moral hazard exists whenever a benefit real or supposed results to the insured or a beneficiary from the occurrence of a fire, or whenever anyone has no proper desire to protect the property against fire. It thus includes both dishonesty and carelessness. Finan-

cial embarrassments, due to hard times, inefficiency, sickness in the family of the insured, or many other conditions may often result in an increase in the moral hazard. There seems to be some correlation between the number of fires and periods of industrial depression, and so far as this is true, it is largely a result of the moral hazard. Disputes as to the ownership of property often increase the moral hazard. Difficulties with employees or quarrels with other persons may also affect the moral hazard. Likewise the use of property in a manner objectionable to others may increase the moral hazard. However the moral hazard may arise, it cannot be measured. Its existence is not usually known before the fire occurs. In some cases the agent discovers what he considers an increase in the moral hazard and orders the policy to be canceled; or investigation may show that a person seeking insurance has in the past had suspicious fires, and a policy is not granted.

Legal Aspects of the Hazard. — Some of the more important legal aspects of the hazard may be noticed in concluding the discussion. The Standard Policy of New York states "this entire policy, unless otherwise provided by agreement indorsed hereon or added hereto shall be void . . . if the hazard be increased by any means within the control or knowledge of the insured." This is a condition subsequent which in insurance law is to be distinguished from a condition precedent. In the former case the company must prove in its defense the violation of the conditions in an action upon the policy, whereas in a condition precedent, as in the case of a loss, the insured must show that he has complied with all

the conditions before he is entitled to a right of action under the policy.

The hazard is supposed to remain static during the time for which the policy is written, the rate being a charge for that amount of hazard which the risk contains at that time. If there is an increase in hazard which the insured caused or which is within his knowledge, he secures more protection than he has purchased. The fire insurance contract relies upon the good faith of the insured, and he is under obligation to make the fact of increased hazard known to the insurer in order that the rate may be adjusted or the policy may be canceled.

It is manifestly impossible for the fire insurance company to keep itself informed upon the changes that may occur in the large number of risks which it has insured. Failure to keep the property in a good condition may be held by the courts in an action as a bar to recovery. The policy contains clauses for contingencies which may arise in connection with the risk that void the policy. These are in practically all cases a change in the hazard which without the consent of the insurer act as a voidance of the policy. The operation of a factory at night, the storing of explosives, and vacancy are examples of a change in hazard which voids the policy if the insurer has not granted permission. The early forms of the fire insurance policy provided for change in hazard only in general terms; but with the increase in different kinds of property and the unfavorable experience with juries, which were frequently disposed to an interpretation and application of the policy in a manner most favorable to the insured, the companies began to specify in great de-

tail what acts and uses constituted a change in hazard. This detailed specification of increased hazards has not served, however, to prevent many contests between the insurer and insured in the courts. For example, the preceding quotation from the Standard Policy contains the phrase "within the control or knowledge of the insured." This affords an opportunity for much discussion and difference of opinion. If, for example, the insured learns of a conspiracy to burn his property but has not had opportunity or time to so inform the insurer, before the property is destroyed, is he to be denied the right of recovery? It is to be noted that the increase in hazard must be known to the insured and within his control. The hazard of many risks changes from time to time as a result of climatic changes or for other natural causes which are not contemplated under this clause. It has been held that the repair of a force pump, although temporarily increasing the hazard of the risk, did not operate to void the policy if the repairs were made within a reasonable period. (Townshend *vs.* Northwestern Insurance Co., 18 N. Y. 168.) A small quantity of petroleum kept for medical purposes, but kept continually, was held to void the policy, notwithstanding that it was not the cause of the fire. (Williams *vs.* Peoples Fire Insurance Co., 57 N. Y. 274.) The weight of authority seems to be that any temporary increase of the physical hazard does not act ordinarily as a forfeiture of the policy. The change must be of a permanent character; that is, either in respect to a different use of the property or in respect to the property itself. It has been held, for example, that where the insured erected other buildings adjoining his pre-

viously insured building that the policy became void because there had been an increase of hazard. Both the insurer and the insured have attempted in the courts to make very fine distinctions in reference to this question of what constitutes an increase in hazard, but on the whole the courts have been disposed to apply this part of the policy according to its spirit, and not its letter. The hazard constitutes the very essence of the fire insurance contract, and demands from both parties the utmost good faith. The insured wishes his indemnity when the loss occurs. The insurer wishes a premium to be paid which is an expression of the real hazard. Dishonesty on the part of either defeats the real interests of both parties.

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CHAPTER VI

RATES AND RATING

The Rate Defined. — The rate in fire insurance is the amount paid per $100.00 of insurance value of the property; that is, the rate is quoted as a 40 cent, a 50, or a 60 cent rate, meaning that $100.00 of insurance is granted for this sum. It may be based on a one, two, three, or five-year period or on a period less than one year. In this last case, the rate is called a "short-term rate." Unless otherwise specified, the rate is quoted on a one-year basis. It corresponds somewhat to the ordinary tax rate in which the tax is stated as so many cents on the $100.00 worth of property. A rate is said to apply to a specific risk or to a class of risks, as for example to a drug store or to dwelling houses. In the first case the rate differs for each risk. In the second case the rate applies to each dwelling house and is the same except as it varies on account of difference in the construction material and exposure in some localities. In the one case there is an analysis of the hazard of each risk for the purpose of determining its particular rate, while in the other case the rate is considered to be representative of the hazard of the class of buildings. The amount of the hazard in either case determines the amount of the risk and hence the rate. The only difference in the preced-

ing examples is, that there is in the first case an individualizing and a more complete analysis of the hazard.

Preferred Risks. — The terms " preferred " and " non-preferred " risks were formerly much in use, the former being those which had a low loss ratio and the latter those which had a heavy loss. This classification of risks is not of great present importance on account of the development of more scientific methods of determining the rate. If the hazard incident to each risk or class of risks is properly discovered and analyzed and therefore a rate derived which measures the cost of the fire protection, then one risk or class of risks ought not to be preferred to another. This is a point in the development of scientific rating which has not yet been completely reached, but sufficient progress has been made to cause the old use of preferred risks to have little significance. Risks are, however, frequently classified as Ordinary, Fire-proof, and Sprinklered. It will be recalled from the past discussion how important the early classification of risks into brick and frame was. This is yet important, for the complicated system of tariffs, found in schedules for fire rating, use what is called a brick and a frame schedule.

The Rate as a Source of Disagreement. — The rate is the subject about which most discussions in fire insurance center, both because it is the price for the consumer and also because of the opportunity to compare these prices by different consumers. On the part of the public there is a very little accurate knowledge as to the nature and purpose of fire insurance. The average person considers it in much the same light as he does any common subject of sale and purchase. He assumes that he

may go into the market and purchase as much or as little as he chooses at so much per unit of measurement. He confuses it with life insurance, concerning which he has gained considerable knowledge during the last decade. He purchases as much life insurance as his saving power enables him. But fire insurance has no direct relation to saving, but should always be a question of indemnity for property loss. The individual demand cannot be measured in fire insurance by the ability and desire to purchase, but must be limited by the value of property possessed; whereas in life insurance full operation of effective individual demand may be permitted, except as it is limited by the physical condition of the applicant, or a maximum limit of insurance in a particular company. That is to say, an individual in normal health could purchase without injury to the business or to other people all the life insurance he desired; but the amount of fire insurance which he should be permitted to purchase should be limited by the value of his property.

The Theoretical Bases of the Rate. — The simplest statement of the theory of fire insurance rates is that the rate is a resultant of the property loss, the expense element, the maintenance of the reserve required by the various state laws, and a provision for a return on the capital invested. The interest rate is over considerable periods of time a relatively constant factor. It is the property loss element in the final cost which fluctuates. This property loss is for any one year an indeterminate and largely an independent variable. The burning rate is always in process of change, and the range of it on an annual basis is sometimes very great. The fluctuation

for a year in the total loss ratio may vary as much as 20 per cent, and the loss ratio on particular kinds of property, or upon all classes of property in particular regions, may vary much more. Yet rates for the future — since fire insurance is a service sold for future delivery — must be determined. In many manufacturing and mercantile businesses the selling price is an expression of the expenses of production with such addition as the producer may be able to add in the nature of profit. But what is a proper rate in fire insurance, that is, what is a proper price from the standpoint of the seller — the insurer — and the buyer — the insured — is a question difficult to determine.

Classification and Rates. — It is a common doctrine in determining prices that each article should express in its selling price its total expenses of production. It is therefore assumed by those who have not given careful thought to the determination of fire insurance rates, that all that is necessary in applying this principle to fire insurance is to classify the fire loss in each industry and prorate this loss on each individual item of the class. This is the system of classification for determining the fire rate. There have been urged two aspects or reasons for classification. First, the classification of properties according to the character of the industry or use to which the property is placed. That is, drug stores, flour mills, and other similar classifications can be made, so that the loss on drug stores by fire would express itself in the price of the product sold. In theory the same could be done for all other industries. Second, that the fire loss should be classified according to political divisions;

that is, the fire losses in New York should be borne by the people of that state and likewise in all other states. Each of these ideas seems to have great plausibility, and it is necessary to examine them carefully to disclose the fallacy both from the standpoint of their practicability as well as to their theoretical justification. That each product should bear its total costs of production is generally admitted, and in so far as fire insurance is a part of this cost, it ought to be borne by the product with the following important modification. Insurance is in all its divisions an essentially coöperative device by which burdens of different kinds are distributed among a group. The money paid out at any one time in loss payments has been collected from various sources and various industries. At any one time the price of a particular product may carry in it an insurance element which will be used to pay losses of another producer or on another product of some other industry or for the losses suffered by producers of the same product in other sections of the country. Likewise when a later loss occurs to the producers of a particular commodity, they will be indemnified by the insurance element in the price of other producers' products. The insurance charge is one for future contingencies, and it cannot be prorated in the prices of present commodities in the same manner as prices for raw materials or for labor.

Classification on the Basis of Industry. — Let us notice further what classification with respect to industries implies. It implies a fundamental error in that it assumes a sameness in risks of the same industry, when, as a matter

of fact, risks are very complex in the same industry. This error results in part from a confusion of fire risks and life insurance risks. In life insurance there is a mortality table and a classification of lives on the basis of age and physical vigor in respect to the known facts of this mortality table. There are no partial losses in life insurance, whereas in fire insurance the greater number of losses are partial. There is no certain expectancy of life in respect to a fire risk. In fire insurance the risk is composed of and affected by a large number of heterogeneous factors, whereas in life insurance the risk is more homogeneous, and the factors affecting it can be classified and their force calculated. For example, a drug store in one city may have a hazard many times that of a drug store in another city. The first drug store may be on the ground floor of a building of several stories, the upper floors being occupied by a tailor shop, a millinery store, and dwelling apartments. The other drug store may be located in a one-story building. Each may be constructed of the same material and each used by an equally careful occupier; or one may be frame and the other brick; or one may be in a city with good fire protection and the other in a city with a poor fire department and water works. One may have a good roof, the other a poor one. There is an endless number of combinations which may be suggested which would make the risks different. Each risk has its inherent hazard, due to the nature of the occupancy, but even this is only one of the numerous hazards which make up the complete hazard of the risk. If the principle of classification was carried to its logical conclusion, there would be many classifications in each

single industry; that is, in the case of drug stores there would need to be a class for one-story drug stores of frame and of brick, of drug stores with careful occupiers, with no adjoining buildings, of adjoining buildings of particular kinds, with a wide street and a narrow street between them and other property across the street, and so on *ad infinitum*. Such classification carried to its logical end would be absurd and would form no data for the determination of fair insurance charges. There would be no basis for the determination of the charge in each class. Even if a minute classification was made of experience in each industry, the results would not be of any value for the future, because the facts would have changed. Such classification would be history, a record of the past. Changes in building material, construction, protection, and many other conditions affecting the hazard of each risk or class of risks are continually made. So that by the time each set of new changes, even supposing they could all be expressed in the classifications, was made, other changes would have occurred, nullifying all the past work. Even if a rate could be devised for a class, it would be only an average rate, and like all averages it might not be the exact rate for a single risk in the class. Such a classification of risks on the basis of occupancy alone would have little more significance for a fire insurance company for rate-making purposes than a classification of persons according to their names or the color of their hair would have for a life insurance company. Any classification of risks to be of value for rate-making purposes must be based upon the complete hazard of the risks.

Classification on the Basis of Political Divisions. — Classification in the second place is often considered on the basis of the political division. Concretely this takes the form of the inquiry why the property owners of one state should not have their fire insurance rates determined by the losses in that state. This aspect of classification often does not refer to the rate on different classes of properties. Assuming that rates have been accurately determined, is there any reason why the people of Missouri should pay for the losses in Illinois? There is a growing sentiment to insist that rates be based upon the classified experience of losses in that state, and under proper limitations this principle may be accepted. The chief limitation arises in connection with conflagrations and certain local and state expenses in particular states. As regards conflagrations it should be recognized that no state is proof against them, and when such heavy losses do occur, the property holders may very properly, in harmony with the mutual character of insurance, expect the past and future payments by policyholders in other states to aid in paying these unusual losses. It is an extra charge which may very properly be distributed over a series of years and upon a large number of property holders to the interest of all concerned. Concretely it is a question whether it was possible or desirable for the people of California to pay the heavy loss of the San Francisco fire or whether a slight additional to the normal charge of protection to property owners in the country at large would not be the better method of raising the large fund for this unpredictable loss. Assuming, therefore, that an analysis of hazard in each state has been made,

an addition called the conflagration addition or charge might be made in the interest of all. If a particular state levies heavy taxes and other charges upon insurance, this should also be added to the normal charge for the analyzed hazard. It may be inquired further if such state classification is permitted in determining the rate, is it not logical to apply it to the minor political divisions in the state in order that the property holders in one county, city, or town may not be compelled to bear the losses of those in other similar political divisions. If, as will be shown later, there has been a really scientific analysis of the hazard incident to each risk, a result approaching this is in fact accomplished. That is, bad risks, poor protection, and other contributing factors to the fire loss in one community may be and are very properly penalized by a higher charge.

The Limits and Value of Classification. — Classification properly understood and properly limited has its value in fire insurance, but not primarily in determining the exact rate for a particular risk. The insurance companies have been accustomed to keep the classified records of their experience. Such records enable the company to know how much of their insurance is on one or the other classes of property, how much is received in premiums, and how much is paid in losses on each class of property and in each political division. They know whether dwelling houses, for example, are profitable or are insured at a loss. Such classification is also of some value in determining the adequacy of the charges in the system of schedule rating in respect to the base rate. It is also a measure or test of the correctness of the

schedule when it is applied. The first test of a schedule is to determine whether it has produced sufficient premiums to pay the losses on the business as a whole. In the past each company has considered its classified experience a trade secret, but under the present plans there is provision for the filing of the experience of many companies, and when the results are classified and made known, a valuable body of data will be available. It will probably not make the question of determining a particular rate on a particular building any more simple than it now is, but it will give sure information as to the adequacy of rates on large groups of property and in different sections of the country. The only classification which is of final importance in arriving at rates is a classification based upon hazard and not upon kinds of property or the uses to which it is placed, however important for general information the results of classified experience may be.

In 1914 the National Board of Fire Underwriters adopted a plan for reporting losses on the basis of occupancy hazards and provided an Actuarial Bureau to gather and prepare such information. The experience of the companies reporting is combined and tabulated "for the purpose of obtaining the fire loss cost of each and every class of hazard in the United States." One hundred and eighty-four companies are reporting to this Bureau, and in time there will be available more reliable statistics of fire losses, but such a compilation of premiums by classes will have no value for specific rate-making purposes. It will show whether a company has made or lost money on a particular class in a particular

state and whether it is doing a profitable business as a whole in a particular state. Yet this fact if favorable to the company cannot be used either by the state regulating officials or by other companies as a rule in establishing specific rates. A company might with a given rate have a favorable experience in one state on a certain class of property and an unfavorable experience in another state on the same class under the same rate. A single state's experience is not a sufficient guide for making rates on that class of property.

The following table shows the total average cost per $100 of insurance written during a ten-year period ending with 1914, with 5 per cent added for profit.

	Total Cost per $100 Insurance Including Conflagration Cost and 5% Profit	Average Rate Paid to All Companies
Maine	1.538	1.47
New Hampshire	1.169	1.27
Vermont	1.301	1.38
Massachusetts	1.035	.98
Rhode Island	.853	.96
Connecticut	.841	1.00
New York	.751	.74
New Jersey	.864	.89
Pennsylvania	1.010	.98
Delaware	.730	.74
Maryland	1.000	.95
District of Columbia	.535	.53
West Virginia	1.544	1.46
Virginia	1.405	1.35
North Carolina	1.281	1.19
South Carolina	1.370	1.30

	Total Cost per $100 Insurance Including Conflagration Cost and 5% Profit	Average Rate Paid to All Companies
Georgia	1.355	1.43
Florida	2.174	2.06
Alabama	1.888	1.65
Mississippi	1.974	2.05
Louisiana	1.447	1.37
Ohio	1.063	1.00
Indiana	1.079	.99
Michigan	1.197	1.05
Wisconsin	1.258	1.10
Minnesota	1.436	1.23
Kentucky	1.410	1.23
Tennessee	1.624	1.38
Illinois	1.259	1.15
North Dakota	2.019	1.67
South Dakota	1.471	1.40
Iowa	1.430	1.07
Nebraska	1.223	1.04
Missouri	1.123	1.00
Kansas	1.359	1.12
Oklahoma	1.392	1.23
Arkansas	1.822	1.49
Washington	1.717	1.53
Oregon	1.666	1.38
Idaho	2.251	1.73
Montana	1.937	2.07
Wyoming	1.532	1.73
California	1.463	1.37
Nevada	2.106	2.19
Utah	1.103	1.13
Colorado	1.366	1.39
Arizona	2.168	2.17
New Mexico	1.740	1.59
Texas	1.601	1.30
United States	1.125	1.06

Early System of Rating. — If classification on the basis of occupancy, that is, on the kind of business which is transacted in the building, does not afford a proper means of determining the rate, what method can be used? For many years rates were made by the fire insurance officials and underwriters on the basis of brick and frame buildings. A rate was made for each without much regard to the hazards other than this construction hazard. As the business developed, each company kept its experience on classes of buildings, and increased or decreased rates according to this experience or as conditions of competition compelled them to do so. The field men, the local agents, and general agents from their experience and observation agreed upon such rates as in their opinion expressed the hazard of the properties to be insured. It was a system of purely judgment-made rates with little attempt to analyze the different hazards of each risk. Discrimination both in respect to different kinds of property and as to persons was frequently present. This resulted partly because of the system of rate-making and partly because of the excessive competition which this method of making rates invited. There was no standard by which to measure hazard, and if one company's experience was more favorable than another's, it might for this or for any one of many other reasons decide to cut rates to secure additional business. Each company considered its experience a trade secret. Rate wars were common, and as is always the case in such contests, the price paid adjusted itself to the strength of the buyer and not according to the hazard of his property. When peace was restored

the companies sought to increase their rates, with the result that the public objected. The companies sought to make agreements for the purpose of observing rates and commissions, but this the public interpreted as monopoly conduct, and forbade it by legal enactment. It is not suggested that these evils did not persist to some extent after an improved system of rate-making was devised, but the inducement to such action was much greater under the old system of making rates according to judgment and the experience of each company.

Schedule Rating. — The present system of rate-making is called schedule rating, and is increasingly used in determining the rates on all kinds of property. The theory underlying the system of schedule rating is that the hazard of each risk can be analyzed into its component parts and that the rate may be derived for each risk by a system of charges and credits, added to or subtracted from a base rate which expresses the unanalyzable parts of the hazard. It will at once be recognized that this system of schedule rating does not exclude judgment as compared with the earlier system, since the base rate itself as well as specific charges and credits is a result of judgment. The difference is that the judgment used in schedule rating is based upon a large accumulation of specific facts.

The Universal Mercantile Schedule. — There are a number of systems of schedule rating, but the two most important are the Universal Mercantile and the Analytical System. These apply to mercantile and the common manufacturing properties alone, and only to those which are not equipped with automatic sprinkler

systems. The Universal Mercantile Schedule was prepared by a committee of which Mr. F. C. Moore was chairman. This system has been modified and adapted in many respects, and in its various changed forms, is in very general use in the eastern section of the United States. These schedules are very complicated, and only the general outlines of the systems are given.

The Universal Mercantile System is based upon a standard building in a standard city which has what is called a key rate. The standard city is one with waterworks of a certain standard of efficiency, with water mains of not less than eight inches in diameter in the business district and not less than six inches in diameter in the residence district. The fire department has also a standard applied to it, as well as the paving of the streets and their width. In addition, there must be an efficient police force. The city must have a good building code and a fire loss record for five years not to exceed five dollars per year per $1000 of insurance. Likewise a standard building was assumed. Among other requirements the building must not have over two thousand five hundred square feet of area, the walls must be of a certain thickness, the building must not be over four stories high and of approved construction. Other requirements were established for this standard building and the standard city with the purpose of securing a measuring unit for actual buildings in actual cities. For this standard building in this standard city a rate of twenty-five cents per $100 of insurance was established.

This was known as the basis rate and represented a

sum from which or to which subtractions or additions were made for any features, superior or inferior to these established standards in the actual building to be rated. In arriving at the actual rate for a building in a given city, allowance was first made for the degree to which the particular city exceeded or fell short of the standard city. This gave the key rate for a standard building in a given city. The next step is to make deductions or allowances for an actual building in the given city, since each building to be rated would differ from this standard building. After these calculations had been made, the rate arrived at by these additions and subtractions would be the one for the actual building unoccupied in the actual city. Then to this rate there was added the charge for occupancy, and to this the rate for the occupied building, exposed. Other additions were made or allowed in the rate if the coinsurance clause was present or absent in the policy, and for such items as taxation, or improper or careless use of the property. Thus the final rate would be secured by a process of measuring good and bad features in the risk as compared with the standard building in the standard city, with additions for occupancy and other features of the risk. Many modifications of this Universal System have been made to adapt it to different kinds of property and to different sections of the territory to which it is applied.

The Analytical System. — Another system of schedule rating which is of general importance is the Analytical System. This was invented by Mr. A. F. Dean. This system does not assume a standard building in a standard city, but divides cities into six classes, based upon their

protection against fire. The starting point in the system is a one-story brick building in a town of the sixth class. This building is not an ideal one, but is a standard type of building of ordinary construction such as is found in an actual town. For this one-story building the Analytical System has a number of tables which give a basis rate for each of the classes of cities. There is no attempt made to select one specific base rate for all cities. There are tables beginning with the 60 cent rate for this one-story brick building in a town of the sixth class, and other tables up to 120 cents. It is assumed that the underwriter or whoever makes the rates for the state will know best which one of these tables, running from 60 to 120 cents, most nearly represents his state. But when once the particular table is selected, it should be adhered to in rating all the risks in the state. All cities and towns in the same state generally take the same basis table, which contains base rates for all classes of cities. For example, the 60 cent table has this rate for a sixth class city, a 57 cent rate for a fifth class, 42 cents for a third class, and 33 cents for a first class city. Likewise the 120 cent table takes this rate for the one-story brick building in the sixth class city, and correspondingly lower rates for the better class of cities. Whichever table is selected in accordance with the local conditions, the base rate or starting point in building up the rate is found in the table. To this base rate, additions and subtractions are made for good and bad features in the occupancy, the construction, the protection, and the exposure. This schedule has a very minute analysis of occupancy and exposure.

Comparison of the Universal and Analytical Systems.—The chief differences in these two important schedule rating systems are as follows. First, since the Dean Schedule starts with an average building in an actual city, the charges and credits will be less; that is, the adjustments will be fewer than in the Universal Schedule, which starts with an ideal building in an ideal city. Second, the additions and subtractions in the Dean Schedule are based upon percentages of the base rate, whereas in the other system it is a flat charge. The percentage method emphasizes the relativity of the credit or debit. An addition of 10 cents for a bad feature in a risk is quite different from an addition of 10 per cent for the same feature. In the latter case it is 10 per cent of the base rate. Suppose the base rate in each case is 40 cents. In one case the bad feature is responsible for an addition of 10 cents, while in the other case 4 cents is assumed to represent its added hazard. Third, the Analytical System is more elastic than the Universal System. The systems differ in other respects, but in most cases they are too complicated for detailed description. The important fact is to realize that in each schedule the purpose is to analyze the constituent elements in the hazard. Neither schedule assumes that the actual facts prove that the specific addition made expresses the exact hazard. Our present knowledge, and in all probability our future knowledge, will not tell us that 20 cents, for example, should be added for the absence or presence of some feature as, for instance, a shingle roof. The most complete statistics of fire losses will not disclose how much a rubber hose gas connection adds to

the hazard of a risk. There are hundreds of such items connected with a risk which are of this character. A schedule is made up by comparison, by judgment, and by the result of experience. Such a schedule is not an exact measure of the individual items in the hazard, but such a system has the merit of consistency and relative fairness. This is more than can be claimed for the earlier method. Above all, schedule rating affords a powerful inducement to property owners and to communities to make such improvements as will reduce the fire loss. A waterworks system with inadequate pressure, a city with a poor building code, an individual property without a fire alarm system in each case is a contributing factor to a loss by fire. Under a system of schedule rating the community and the individual know that so much of an allowance is permitted when they remove the objectionable features. Schedule rating, although empirical, is the best known method of apportioning the fire cost.

The Experience Grading and Rating Schedule. — A schedule based upon the combined experience averages of companies has been proposed by Mr. E. G. Richards. Neither the Mercantile nor Dean Schedule is based upon the actual tabulated experience, since such experience has never been completely analyzed and made available except as losses in the country as a whole, in states, or in other political divisions. As has been described, these two schedules are based upon the plan of assessing specific charges for particular features of the hazard. These charges are in general of an arbitrary character. Yet the idea that actual experience on different classes of

property and in different regions affords the true basis for rate-making has persisted and has been urged by the public, by state regulatory officials, and by some insurance officials. There is no doubt a tendency on the part of the states to insist that the experience of companies be classified and that the results of this experience receive more consideration in determining the rates for insurance in the particular states.

The schedule published by Mr. Richards in 1915 is called " The Experience Grading and Rating Schedule," and represents a very completely organized system for using experience as the basis of rate determination.

The National Board of Fire Underwriters has undertaken through its Actuarial Bureau the task of combining the experience of the companies which are members of this board, and this schedule proposes to use these data as the basis for determining rates. The Experience Grading and Rating Schedule proposes:

First, to analyze the hazard by its comparative qualities in place of the present method of analyzing its specific parts and uses.

Second, to determine " the average rate which stock fire insurance companies should have fairly received throughout the United States upon all risks of every class over a period sufficient for an average, say ten years." This is the basis or starting point of this new schedule. This average would be obtained by compiling the losses and expenses and adding to this a fair profit on the capital invested. This result divided by the total amount insured would give this average rate.

Third, to calculate in a similar manner the average

rate for each state, charging to each state such items as taxes and license and any other specific parts of the expense which are incurred in that state and pro-rating among the states the unanalyzable remainder of the expenses. It is assumed that the conflagration expenses will be distributed among all the states. Having now determined the average rate for the average risk in the United States and the average rate for the average risk in each state, the next step is:

Fourth, to determine the rate for an average risk in a specific class in the United States. This in the proposed plan would be done by classifying the towns and cities of the United States into ten groups: by classifying the occupancy, including private protection, building construction and exposure, internal and external. Having all this experience reported and tabulated, the analysis of it would give the rate on an average risk in its particular class, grade, and location and likewise the rate on such a risk in each state. The author of this schedule bases it upon his belief that " the desideratum of schedule rating will be found in the direction thus indicated, for with hazards limited to such as are fundamental and each hazard subdivided into its comparative parts from best to poorest, a rating schedule can be formulated, each part or unit of which will be the clear and demonstrable outcome of underwriting experience and cost."

It will be understood that the proposed plan is dependent upon a uniform classification of experience of all companies and would require a survey and grading of every risk. The strong feature of the proposed plan is the consideration which it seeks to give to the actual

experience of companies in insuring property. But it, like the systems now in use, would have a large element of arbitrariness in it. This arbitrary element will always be found in any rating system of insurance, just as it is found in railway rates or in any other price which has so many complex factors entering into its determination. No magic yardstick can be applied. No cost system of the most complete character will make possible the specific identification and distribution of every element in the cost.

The point at which the theoretical justification for classification is found is infinity. Nevertheless, the system proposed by Mr. Richards has within it many of the best features of the plans now in use, and in addition gives more consideration to actual experience in larger groups. It may be that the new system overemphasizes the average risk just as the present system stresses too much the individual risk. As has been stated there are a number of other schedules, but they are either of minor application or are like the above system, proposals which have not been actually applied.

The L. and L. Schedule. — Another schedule which is receiving attention is the L. and L. Rating System. This schedule was devised in 1915 and has had some experimental application. Among other features of this system the following are important:

First, The basis rate and charges are graduated according to fire protection available.

Second, Rates are to be so adjusted as to provide average loss ratios of 50 per cent of the premiums excluding conflagration.

Third, Towns are graded into ten classes.

Fourth, There are three schedules: non-fireproof brick, fireproof, and frame and miscellaneous.

Fifth, The "Burning Degree" as determined by the ignitibility of the risk supplies the basis for a high degree of analysis.

Sixth, Rates are based upon an 80 per cent coinsurance clause.

Like the other schedules, the L. and L. Schedule provides for a high degree of analysis with specific charges and allowances. In the occupancy list there are 1252 classes.

How Rates are Made. — Rates are made either by the companies or by independent organizations. When they are made by the companies, this is done: (*a*) by the company officers or surveyors, as in the case of the Factory Mutual Insurance Associations; (*b*) by field men of the company or by surveyors under their direction, as in the territory of the New England Insurance Exchange; (*c*) by local agents, or surveyors under the supervision of the company. The independent rating is done by organizations called rating bureaus or inspection bureaus, which are numerous throughout the Middle West. These bureaus employ inspectors, surveyors, and other technical experts who examine a building or a city and determine the rate to be charged. This information or service is sold to the insurance companies. These rating bureaus are in fact a result of the laws that were passed in a number of states, which prohibited the companies from forming associations to derive rates and to agree upon their observance.

Competition in Determining Rates. — It will be observed that so far as there is success in analyzing the constituent hazard of a risk or class of risks there is no reason for variation in the price which should be charged, in so far as it is determined by the fire loss alone. The fire loss must be distributed, and the basis of its distribution should be the relative hazard or probable contribution which each property is to make to this loss. There is no place for competition among companies in determining the burning rate. Nothing that any one company can do will affect this part of the charge for insurance. One company may be more economical than another in administering its business; it may be more successful in securing good returns from its investments; it may secure better service from its agents; but the burning rate is not determined by the company's conduct. There can be competition in the service to be rendered by insurance companies, but the public should not encourage them to compete in the making of the rate. This has been frequently required by state laws. The companies have been prevented in some states from coöperating in making rates. If this coöperation in rate-making is done under the supervision of the state, nothing but public good need result. A period of rate-cutting among companies has usually meant one of two things. Either the public did not get good insurance, that is, the company often failed as a result of the extremely unprofitable rate at which it secured the business, or — and this is the more usual result — the deficiency in charge to one group of policyholders was made up on another, that is, discrimination resulted from

excessive competition. Then again, a rate war, no more than any other kind of a war, could continue indefinitely. When peace came, rates were sought to be advanced, and this engendered additional public opposition. If the public would understand that the price of fire indemnity is very largely determined for the insurance companies by conditions and forces over which they have little control, the question of public regulation of fire insurance would be much simplified.

Public and Private Rate-making. — The question of public or private rate-making has been receiving during the last decade increased attention. A number of investigations of the fire insurance business have been made with the view of examining three accusations which have been frequently made against fire insurance companies. First, were fire insurance companies guilty of monopolistic practices of a character similar to that of the trusts? Second, were such companies guilty of discriminating in rates? Third, was the expense of such companies unduly high? It cannot be said that these numerous investigations have satisfactorily answered these questions for many people. The first question arose from practices already described in regard to making rates. No one denied that there were many different companies of independent ownership. But because the greater number of the companies charged the same rate for insuring a building, it appeared to many purchasers of insurance that there must be some kind of a covert understanding among companies as to prices. The ordinary purchaser, accustomed to " higgling " over prices, could not understand why the " one-price-to-all " principle of

insurance companies did not prove the existence of a monopoly. To the extent that the fire hazard is accurately measured, to that extent there should be uniformity of rates; and the similarity in price does not prove a combination against the public, but rather a measure of a charge that the public inflicts upon itself. A combination and agreement among companies to make rates is one thing, and a combination to maintain such rates in opposition to improvements is another thing. The first should be encouraged and required by law, because this would work to produce an economy in the expense.

If it is admitted that the fire hazard is measurable — and to deny it is to adopt a method of guessing which would preclude any justice in the charge and also to neglect a large body of accumulated experience, which proves the contrary — then this measurable quantity — the hazard — does not need to have different individuals to do the measuring. It would almost be like asking ten persons to measure a distance of a mile with a yardstick. There might be a slight difference in inches in the result, but these would not be of any great significance. If one competent person does the measuring, his results may profitably be accepted by all.

Doubtless some of the opposition to the companies for their assumed monopolistic action has arisen from the fact that in many cases they were foreign companies, that is, either of other states or of foreign countries. In many cases the evils of an absentee landlord seem to exist. There was no one except the agent who personally represented them, and as has been shown, the fire insurance agent while legally the representative of the company,

is in the practical conduct of the business quite as frequently the representative of the policyholder. He represents many companies, and is anxious to please the policyholder and the public who supply him with business. Indeed, in those cases where rating bureaus or other rating organizations independent of the companies have come into existence, the companies are coming more and more to rely upon them than upon the agent to protect their interest, so far as securing an adequate price or rate for the insurance. Not infrequently the agent in fire insurance solicits the rating organization for a favorable rate just as the life insurance agent sometimes is anxious for the medical examiner to make a favorable report on a life which he proposes for insurance.

Uniformity in Rates. — In general it may be said that there can be little doubt as to the final result of the discussion about competition and agreement as to the fire insurance rate, so far as it is made up of the fire hazard. As the nature of fire insurance becomes better understood, the uniformity in rates will become more marked whether it be under a system of private or public insurance. There will never be a settlement of the rate problem. Conditions change so rapidly in respect to the numerous hazards that adjustments will be made continually, and therefore the extent and character of the adjustments will always be a subject for discussion and difference of opinion. But however much discussion there may be as to details of the rate there can be none as to the method of making rates. They should be made by one body. That is, by the companies, associated or by an independent body which sells this service to companies which should be

forced to use them or by the state itself or under its supervision.

Discrimination in Fire Insurance. — The second accusation which has frequently been made against the companies is that they have been guilty of discrimination. On this count, the fire insurance companies have not been able to make such a clear case of innocence. Discrimination in fire insurance rates may be of three kinds: between persons, that is, individual property of the same kind, between classes of property, and between places or political divisions such as cities or states. There have undoubtedly been numerous examples of all these classes of discriminations. Some discrimination yet exists, especially in the case of classes of property.

Personal Discrimination. — The first kind of discrimination, that between persons, is almost wholly a result of competition. The desire of a company to secure the risk, and the skill of the insured in playing off one company against another, results in the insured securing a lower rate than that upon other property of a like hazard. This is especially prevalent where there is not close public supervision of the companies' operation, but even with the best devised form of regulation a certain amount of this kind of discrimination will persist. The large buyer under our present economic system has an advantage over the smaller buyer which it is difficult to control.

Property Discrimination. — The second class of discrimination, that between classes of property, is a result in part of competition, in part of the lack of complete data as to the hazard of different classes of property and the losses on these different classes as compared to the

premium receipt, and finally, in part, as an easy method in practice, of adjusting means to an end. So far as competition has affected this kind of discrimination, it has resulted from the fact that on certain classes of property there is greater competition for the business than on others. The result has been that the rate was made something below the real hazard or at least less than what would bring a profitable return. The difference or deficit has been made up on other classes of property which could stand a charge higher than the real hazard. Business property usually represents considerably more capital investment than dwelling property. The owner who has a business property valued at $100,000 will bargain for an insurance rate as low as possible, while on his $10,000 residence he is disposed to accept whatever rate is quoted to him, since the total out-of-pocket expense to him in the latter case is much smaller than in the former case, however good the bargain is, which he drives for the rate on his business property.

It is also generally true that there is more competition among companies for the business property insurance. The premium is larger, the expense of securing it is often favorable, and therefore a large net contribution may be made to the finances of the company. The insurance business is in many respects subject to the law of increasing return. Many of its expenses are of such a constant character, that a large volume of business on a single risk brings a very favorable return.

Rates should, if they are to be equitable, measure the hazard of all classes of risks, but even if this hazard is known, competition must be controlled if the insured

is to secure equity in the actual rate. In this connection the fire rate is similar to a tax. A rate in taxation is established, but whether the property owner pays his full tax depends upon his honesty in making the return, or the skill of the taxing official in finding his property. So with the property owner in paying his insurance charge. It depends first, upon arriving at a rate which is the true measure of its hazard, and second, upon the absence of competition to see that he pays all of this rate.

The term " preferred classes " was formerly in frequent use to represent those classes of property which brought to the companies a highly favorable return. If, however, rating ever becomes sufficiently analytical to measure the real hazard of all kinds of property, one class of property will be as much a preferred risk as another, provided there is adequate control in collecting the rate. If classification has any real service to render to the solution of the problem of fire insurance rating, it is in this connection. That is to state, a complete classification of the experience of companies on all classes of properties would aid the rating official in arriving at a more equitable charge.

Geographical Discrimination. — Classification may also be of some service in the third kind of discrimination, viz. that between states or other smaller political divisions. This kind of discrimination has also in part resulted from competition. Not infrequently a rate war has occurred in a city or a state and the deficit has been made up by collecting higher rates in other sections where the experience and the hazard would entitle property holders to a lower rate. Notwithstanding the great prevalence of competition, naturally existing and

legally enforced among companies, a condition of peace among companies is conducive to stability of rates in the face of facts justifying a reduction. It is easier for an individual to secure a reduction in rates than for a community. The past history of companies affords so many examples of unprofitable rates in so many localities, that the companies are loath to make, voluntarily, a reduction in rates unless forced to do so. Interpreted in the best light the static rate seems to the companies often a collection of a debt past due from the insured public. It again illustrates the similarity of the insurance charge to a tax. One characteristic of a good tax is its ease of collection. Revenue for the state must be collected, and often the criterion of abstract individual or group equity is sacrificed for the practical advantages of securing the revenue. Classification may here be of some service in that the collected experience of the losses in each state may indicate the justice of increasing or reducing the rates in a particular state or locality. How this increase or reduction is to be distributed is a question primarily for the rating official, since his particular service is to express in the rate the hazard of the particular risk. Nothing that is here stated should be understood to be urged as a reason for not assessing upon a particular state its just charge for the conflagration hazard. No state or community should expect the privilege of rates which measure only their loss unless they are willing to bear that heavier charge which results from large fires or conflagrations. This, as has been previously shown, is practically impossible. The fair and practical method is to give a full application to the principle that insurance is

fundamentally mutual and by thus aiding each other at times of unusual losses, the net cost for all states becomes over a long period lower.

The Expense as a Cause of High Rates. — The third general accusation made against fire insurance companies which has led to these investigations is that the expense of such companies has been unduly high. This subject is deferred for a more detailed discussion to a later chapter, but in this connection two aspects of it may be considered. The expense for commissions has been the center of interest in the investigations and here again the companies and their agents have not agreed in their views. The companies have attempted through various organizations to standardize the commissions, but the competition which the public has encouraged and required has often prevented the achievement of this end. Many companies have refused to join these organizations and observe the agreement of these " unions " or " boards." One of the most effective means for a company to secure buisness is to offer the agent a higher commission for it. The agent who represents several companies is in a position of advantage. The agent, and especially the broker, can bargain with the companies. The company was often willing to pay the agent a higher commission on that class of business which its experience had shown to be profitable. Excessive competition often expressed itself in fluctuating commissions as well as in fluctuating rates, in discriminating commissions as well as in discriminating rates. The public has paid the price for this competition, since the public is in final analysis the sole source of revenue for

the fire insurance charges. Many do not seem to realize that property owners pay for the property loss by fire. The rate paid is an expression of this charge and, as in the taxes, the important question is how to equitably distribute the tax and the fire insurance rate among persons and localities.

It was stated in an earlier part of this discussion that the prices of a product should bear its total costs of production and that the fire insurance charge is a part of that total cost. This cost can only be assigned by an analysis of the hazard, connected with the production of the commodity. Classification cannot assign this cost. It can only aid in its proper assignment.

There remains one other important question in reference to the determination and assignment of this cost, viz. shall it be done by the companies either directly or in coöperation with other private organizations, or shall it be done by the state? That is, should rating be a public or a private function? It is assumed that it is desirable to have the rating done in a uniform manner, that is, that the rating is a monopolistic and not a competitive activity.

The Control of Rates by a State. — It is not longer a question whether the state has the legal power to fix the rates in fire insurance. The Supreme Court of the United States decided this question in the case of German Alliance Insurance Company *vs.* Lewis (24 N. S. Sup. Ct. Rep. 612) decided April 20, 1914. In this case the court remarked:

"We may venture to observe that the price of insurance is not fixed over the counters of the companies by what Adam Smith

calls the higgling of the market, but formed in the councils of the underwriters, promulgated in schedules of practically controlling constancy which the applicant for insurance is powerless to propose, and which, therefore, has led to the assertion that the business of insurance is of monopolistic character and that 'it is illusory to speak of a liberty of contract.' It is in the alternative presented of accepting the rates of the companies or refraining from insurance business necessity impelling if not compelling it, that we may discover the inducement of the Kansas statute; and the problem presented is whether the legislature could regard it of as such moment to the public that they who seek insurance should be no more constrained by arbitrary terms than they who seek transportation by railroad, steam, or street or by coaches whose itinerary may be only a few city blocks or who seek the use of grain elevators or to be secured in a night's accommodation at a wayside inn or in the weight of a 5 cent loaf of bread. We do not say this to belittle such rights or to exaggerate the efforts of insurance but to exhibit the principle which exists in all and brings all under the same governmental power."

The power of each state over the fire insurance business is limited only by constitutional guarantees. It is not interstate commerce. The rate for insurance is under complete control of the state. It is not therefore a question either of lack of power to fix rates or of any theoretical inability to do so. There is no legal reason why the state could not do what the companies and other organizations are now doing in respect to establishing rates. It is a question of what advantages are to be gained by a system of state-made rates under which the state by a department with a very large force of employees would do what is now done and what can be controlled in minutest detail. The state would, under a system of state-made rates either: (*a*) fix maximum

rates; or (*b*) fix specific rates; or (*c*) supervise rates, compel adjustments, and otherwise supervise the rate-making and its application. Some attempts, notably in Texas, have been made to establish rates by state authority but the success or advantage is, so far as results have shown, very doubtful. There would be as much dissatisfaction from local communities under state-made rates as there now is and with greater opportunity to make these local protests heard in readjusting the rate.

The Pennsylvania Commission appointed to investigate fire insurance companies reported as follows on this point:

"While State rating might possibly be considered in a community with a small number of risks, the proposition in a state like Pennsylvania would be a stupendous and expensive one to embark in. Certainly, no one, fully acquainted with the facts, would ask or advise that the State, either by statute or through a commissioner or commission, fix the price of fire insurance. Besides, no honest man could object to a law to recompense the company in case the rate proved inadequate to meet the loss. Should a conflagration occur in any one of the cities, the State might be called upon to make good an immense sum. The San Francisco loss would have entailed upon California a debt of over a hundred million dollars. . . . A careful reading of our report should quickly convince any one that the fire insurance business in Pennsylvania, with its eight millions of people and billions of property liable to fire losses, so located that to solve the problem of equitable rates of premium, under the countless varying conditions, would call for an army of experts to find the proper rates and keep informed of the constant changing of conditions, and would require a new Department, supervised by a corps of the ablest insurance men in the world, aided by a force of at least three to five hundred clerks and from three to four hundred field men and —

in order to accommodate the public — not less than five thousand agents. Government control of any of the public utilities would be a much simpler proposition. To attempt it, is impracticable, as the revenue is not in sight to provide the necessary reserve to give the public proper protection. There are many congested districts in Pennsylvania where a conflagration might occur at any moment and the State might be called upon to make good a loss of many million dollars. Without providing a large reserve, the proposition would be absolutely impracticable. Individuals carry several millions of dollars on single properties.

"Your Commission feels that a Department, dealing with a proposition requiring such a large force of employees and with a subject so complex and so close to every property holder, and one so impossible to reduce to a common standard, would soon hear the cry that favoritism was being practiced through political intrigue; that the whole Department would soon be in disgrace, whether rightfully or wrongfully accused; that public sentiment would quickly ask for the repeal of the law and the abandonment of the whole proposition. Strange as it may seem, that portion of the public which cries loudest for government control complains more against the supposed general dishonesty of public officials."

Summarizing the discussion of rates we find:

First, that in the early period rates were based largely upon the judgment of what underwriters and company officials thought the hazard of a risk or classes of risks was. Second, that as experience accumulated and the science and art of fire underwriting developed, there came to be a more careful analysis of the hazard. Schedules were invented which were applied to some of the more important classes of risks. Third, that classification of risks according to occupancy is an aid but not a solution of the rating problem. Fourth, that the rating problem will always remain a problem because of the numerous

changes in the different kinds of hazard. Fifth, that competition has no place in rate-making. Sixth, that the public can secure by public regulation of rate-making and its application all the advantages which it would obtain from a system of rates made under public authority.

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CHAPTER VII

THE POLICY CONTRACT

The Policy Defined. — The policy in fire insurance is a contract, made by the insurer and the insured, under the terms of which the insurer agrees to indemnify the insured for loss suffered to his property as a direct and immediate result of fire. The contract is a personal contract of indemnity, and an accurate understanding should be had of what is meant by indemnity. In life insurance the contract is not based upon any actual or imagined indemnity suffered by the insured or his dependents or his beneficiaries. Human life does not lend itself to an easy valuation. But property is a tangible thing with a value.

Nature of the Contract. — The fire insurance contract is an agreement whereby the insured, by the payment of a certain sum and the compliance with other conditions, is entitled in the case of a fire to receive from the insurer the value of the property destroyed or such part of the value of the property as he has insured. The insured does not essentially purchase so many dollars' worth of insurance, but by the payment of a premium, based upon an analysis of the fire hazards of his particular property, he guarantees or insures that he will have the use of his property, free from destruction by fire; that is, the insurer indemnifies him for such property as has been destroyed. Too much emphasis cannot be laid upon this

indemnity character of the fire insurance contract, for it is frequently misunderstood by the public. This error has been the source of much ill-advised legislation which permitted the insured to recover, not what he lost by fire, but " that amount of dollars of insurance " which it was believed he had purchased. Fire insurance protection cannot be considered as distinct from property. It is not a quantity which is sold as an ordinary commodity, such as wheat, by the unit measure. It is indemnity, that is, what was actually lost by the occurrence of fire.

A Personal Contract. — The contract of fire insurance is also a personal contract. This may appear to be in opposition to what has just been stated, but the contract insures not property but persons. There is, however, no conflict in the two statements. It is personal in the sense that it is made with an individual who has an interest in the property insured. It is on the property for the benefit of its owner or one who has a valuable interest therein. The policy does not follow the property. It is a contract made with the insured to indemnify him for a loss, and if the control of the property passes from him to another, he has no claim to indemnity, since he can suffer no loss. The character of the owner may, as has been shown, affect the probability of a loss; that is, carelessness in its use, or personal dishonesty, may so affect the hazard, that the insurer would not be willing to insure the property at any price when its control passes from one person to another.

The policy is based upon the assumption that the utmost good faith will be displayed by the insured. It is true that the contract has been made by the insurer, and

presumably he has protected, so far as is possible, his interests by the provisions of the contract. Yet the property is in the possession and under the control of the insured. The insurer has no means either of completely knowing all the conditions of the property at the time the contract is consummated and the character of the insured, or of later knowing whether the insured is fully complying with all the conditions of the policy. While the insurer may have the position of advantage before the contract is entered into, the insured has that position later.

Early Policies. — Fire insurance policies date from 1667, although earlier contracts were probably made; but authentic records date from this year. Marine insurance had, preceding this date, considerable development, and the early fire insurance policies had the benefit of the experience under these policies. The early policies were very simple as compared with those of the present, although from the very fact that such policies have been in existence for over two hundred years and have received application and interpretation by courts, insurer, and insured, there has developed a body of principles, specific application of words and phrases, which are of great service. The early policies were brief, but there was also a prospectus, issued by the company, which was referred to in the policy and made a part of it. Both the policy and the prospectus in case of a legal dispute were used in applying the contract. In time, the prospectus became a part of the contract.

In the United States, the early policies, as well as the companies, were patterned upon those in England. Since much of our law and legal procedure is based upon

or derived from that of England, the numerous court decisions and interpretations which the fire insurance policy received in the English courts were available for our courts. Almost every line and phrase of the fire insurance policy has been a subject of litigation during this long period, and a large amount of legal interpretation is available as to what the contract means. This explains largely why the present policy retains many of these early phrases or other modernized phrases with the same meaning. Such a contract needs to be standardized, and its importance is so great and the interests which it concerns so momentous, that changes should not be made for trivial reasons.

When fire insurance companies were organized in this country, each company drew up its own contract with whatever terms it pleased. Naturally there was considerable similarity, but as the companies increased in numbers, as competition for business became more active, and as many different kinds of property in many different territories with widely varying conditions in respect to hazard developed, there came to be a great variation in the policy contracts. This led to endless confusion and frequent litigation. Some states required certain provisions to be in all fire insurance policies, but this left large opportunity for modification to suit the convenience of the individual companies. Some companies endeavored to attract business by the terms of the policy, and not infrequently drew these clauses in such a clever manner, that they secured the business, but were often relieved of liability when a suit was instituted to enforce the payment of the policy.

When the National Board of Underwriters was organized in 1866, a uniform policy was drawn up, but this Board had no power other than moral suasion to compel its adoption. The personal interests of the companies were so much greater in retaining their own policy that they did not adopt this uniform policy. Self-interest thus prevailed over moral persuasion. Each company continued free to use its own policy. In 1873 the state of Massachusetts adopted a uniform policy, but its use by the companies was voluntary until 1881 when its use by all fire insurance companies doing business in Massachusetts was made compulsory. In 1886 the state of New York adopted a standard policy, and its use was made mandatory beginning with January 15, 1887.

Importance of Standard Policies. — The experience in the earlier years made clear the necessity of having a standard policy, that is, either a policy with its provisions stated in great detail, or such standard provisions as would cover all the more important aspects of the contract. The very character of the contract is one which makes large opportunities for misunderstanding and invites litigation. That protection which it grants becomes all important at the time of a loss. The insured seldom knows or ordinarily can know much in reference to the details of this technical subject. His interests must be protected by the state, and this is done in part by the standard policy. These standard provisions receive interpretation by the courts, and as they are applied, certainty as to the meaning replaces uncertainty. The field of litigation grows smaller. Seventeen states have adopted a standard policy, and this num-

ber includes almost all the important states from the standpoint of property value. Of these states all except three use the New York form of the Standard Policy; two use the Massachusetts form; other states have what is practically a Standard Policy.[1] The particular form of the Standard Policy is modified in some relatively unimportant details to suit the local conditions or to meet local prejudices. There remains a large similarity in all the Standard Policies and the following form is given as typical:

Standard Fire Insurance Policy

THE.....FIRE INSURANCE COMPANY IN CONSIDERATION *of the Stipulations herein named and of* .....
DOLLARS PREMIUM

(a) *Does Insure*..... *for the term of* ..... *from the*.....*day of*..... *19*.., *at noon, to the*..... *day of*..... *19*.., *at noon,*
To an amount not exceeding.....
Dollars, to the following described property while located and contained as described herein, and not elsewhere, to wit:

.....

(b) *This company shall not be liable beyond the actual cash value of the property at the time any loss or damage occurs, and the loss or damage shall be ascertained or estimated according to such actual cash value, with proper deduc-*

[1] The association of the Insurance Commissioners of the various states has drawn up a revised Standard Policy, but since all the provisions of the older Standard Policy are found in this revised form and constitute the chief provisions, the older form is made the basis of the discussion.

tion for depreciation however caused, and shall in no event exceed what it would then cost the insured to repair or replace the same with material of like kind and quality; said ascertainment or estimate shall be made by the insured and this company, or, if they differ, then by appraisers, as hereinafter provided; and, the amount of loss or damage having been thus determined, the sum for which this company is liable pursuant to this policy shall be payable sixty days after due notice, ascertainment, estimate, and satisfactory proof of the loss have been received by this company in accordance with the terms of this policy. It shall be optional, however, with this company to take all, or any part, of the articles at such ascertained or appraised value, and also to repair, rebuild, or replace the property lost or damaged with other of like kind and quality within a reasonable time on giving notice, within thirty days after the receipt of the proof herein required, of its intention so to do; but there can be no abandonment to this company of the property described.

(c) *This entire policy shall be void if the insured has concealed or misrepresented, in writing or otherwise, any material fact or circumstance concerning this insurance or the subject thereof; or if the interest of the insured in the property be not truly stated herein; or in case of any fraud or false swearing by the insured touching any matter relating to this insurance or the subject thereof, whether before or after a loss.*

(d) *This entire policy, unless otherwise provided by agreement indorsed hereon or added hereto, shall be void if the insured now has or shall hereafter make or procure any other contract of insurance, whether valid or not, on property*

covered in whole or in part by this policy; or if the subject of insurance be a manufacturing establishment and it be operated in whole or in part at night later than 10 o'clock, or if it cease to be operated for more than ten consecutive days; or if the hazard be increased by any means within the control or knowledge of the insured; or if mechanics be employed in building, altering, or repairing the within-described premises for more than fifteen days at any one time; or if the interest of the insured be other than unconditional and sole ownership; or if the subject of insurance be a building on ground not owned by the insured in fee-simple; or if the subject of insurance be personal property and be or become incumbered by a chattel mortgage; or if, with the knowledge of the insured, foreclosure proceedings be commenced or notice given of sale of any property covered by this policy by virtue of any mortgage or trust deed; or if any change, other than by the death of an insured, take place in the interest, title, or possession of the subject of insurance (except change of occupants without increase of hazard), whether by legal process or judgment or by voluntary act of the insured, or otherwise; or if this policy be assigned before a loss; or if illuminating gas or vapor be generated in the described building (or adjacent thereto) for use therein; or if (any usage or custom of trade or manufacture to the contrary notwithstanding) there be kept, used, or allowed on the above-described premises, benzine, benzole, dynamite, ether, fireworks, gasoline, greek fire, gunpowder exceeding twenty-five pounds in quantity, naphtha, nitroglycerine or other explosives, phosphorus, or petroleum or any of its products of greater inflammability than kerosene oil of the United States standard (which last may be used for lights and kept

for sale according to law, but in quantities not exceeding five barrels, provided it be drawn and lamps filled by daylight or at a distance not less than ten feet from artificial light); or if a building herein described, whether intended for occupancy by owner or tenant, be or become vacant or unoccupied and so remain for ten days.

(e) *This company shall not be liable for loss caused directly or indirectly by invasion, insurrection, riot, civil war or commotion, or military or usurped power, or by order of any civil authority; or by theft; or by neglect of the insured to use all reasonable means to save and preserve the property at and after a fire or when the property is endangered by fire in neighboring premises; or (unless fire ensues, and, in that event, for the damage by fire only) by explosion of any kind, or lightning; but liability for direct damage by lightning may be assumed by specific agreement hereon.*

(f) *If a building or any part thereof fall, except as the result of fire, all insurance by this policy on such building or its contents shall immediately cease.*

(g) *This company shall not be liable for loss to accounts, bills, currency, deeds, evidences of debt, money, notes, or securities; nor, unless liability is specifically assumed hereon, for loss to awnings, bullion, casts, curiosities, drawings, dies, implements, jewels, manuscripts, medals, models, patterns, pictures, scientific apparatus, signs, store or office furniture or fixtures, sculpture, tools, or property held on storage or for repairs; nor, beyond the actual value destroyed by fire, for loss occasioned by ordinance or law regulating construction or repair of buildings, or by interruption of business, manufacturing processes, or otherwise; nor for any greater proportion of the value of plate glass,*

frescoes, and decorations than that which this policy shall bear to the whole insurance on the building described.

(h) *If an application, survey, plan, or description of property be referred to in this policy it shall be a part of this contract and a warranty by the insured.*

(i) *In any matter relating to this insurance no person, unless duly authorized in writing, shall be deemed the agent of this company.*

(j) *This policy may by a renewal be continued under the original stipulations, in consideration of premium for the renewed term, provided that any increase of hazard must be made known to this company at the time of renewal or this policy shall be void.*

(k) *This policy shall be canceled at any time at the request of the insured; or by the company by giving five days' notice of such cancellation. If this policy shall be canceled as hereinbefore provided, or become void or cease, the premium having been actually paid, the unearned portion shall be returned on surrender of this policy or last renewal, this company retaining the customary short rate; except that when this policy is canceled by this company by giving notice, it shall retain only the pro rata premium.*

(l) *If, with the consent of this company, an interest under this policy shall exist in favor of a mortgagee or of any person or corporation having an interest in the subject of insurance other than the interest of the insured as described herein, the conditions hereinbefore contained shall apply in the manner expressed in such provisions and conditions of insurance relating to such interest as shall be written upon, attached, or appended hereto.*

(m) *If property covered by this policy is so endangered by fire as to require removal to a place of safety, and is so removed, that part of this policy in excess of its proportion of any loss and of the value of property remaining in the original location shall, for the ensuing five days only, cover the property so removed in the new location; if the removal to more than one location, such excess of this policy shall cover therein for such five days in the proportion that the value in any one such new location bears to the value in all such new locations; but this company shall not, in any case of removal, whether to one or more locations, be liable beyond the proportion that the amount hereby insured shall bear to the total insurance on the whole property at the time of fire, whether the same cover in new location or not.*

(n) *If fire occur, the insured shall give immediate notice of any loss thereby in writing to this company, protect the property from further damage, forthwith separate the damaged and undamaged personal property, put it in the best possible order, make a complete inventory of the same, stating the quantity and cost of each article and the amount claimed thereon; and, within sixty days after the fire, unless such time is extended in writing by this company, shall render a statement to this company, signed and sworn to by said insured, stating the knowledge and belief of the insured as to the time and origin of the fire; the interest of the insured and of all others in the property; the cash value of each item thereof and the amount of the loss thereon; all incumbrances thereon; all other insurance, whether valid or not, covering any of said property; and a copy of all the descriptions and schedules in all policies; any changes in the title, use, occupation, location, possession, or exposures of said*

property since the issuing of this policy; by whom and for what purpose any building herein described and the several parts thereof were occupied at the time of fire; and shall furnish, if required, verified plans and specifications of any building, fixtures, or machinery destroyed or damaged; and shall also, if required, furnish a certificate of the magistrate or notary public (not interested in the claim as a creditor or otherwise, nor related to the insured) living nearest the place of fire, stating that he has examined the circumstances and believes the insured has honestly sustained loss to the amount that such magistrate or notary public shall certify.

(o) *The insured, as often as required, shall exhibit to any person designated by this company all that remains of any property herein described, and submit to examinations under oath by any person named by this company, and subscribe the same; and, as often as required, shall produce for examination all books of account, bills, invoices, and other vouchers, or certified copies thereof if originals be lost, at such reasonable place as may be designated by this company or its representative, and shall permit extracts and copies thereof to be made.*

(p) *In the event of disagreement as to the amount of loss the same shall, as above provided, be ascertained by two competent and disinterested appraisers, the insured and this company each selecting one, and the two so chosen shall first select a competent and disinterested umpire; the appraisers together shall then estimate and appraise the loss, stating separately sound value and damage, and, failing to agree, shall submit their differences to the umpire; and the award in writing of any two shall determine the amount*

of such loss; the parties thereto shall pay the appraiser respectively selected by them and shall bear equally the expenses of the appraisal and umpire.

(q) *This company shall not be held to have waived any provision or condition of this policy or any forfeiture thereof by any requirement, act, or proceeding on its part relating to the appraisal or to any examination herein provided for; and the loss shall not become payable until sixty days after the notice, ascertainment, estimate, and satisfactory proof of the loss herein required have been received by this company, including an award by appraisers when appraisal has been required.*

(r) *This company shall not be liable under this policy for a greater proportion of any loss on the described property, or for loss by and expense of removal from premises endangered by fire, than the amount hereby insured shall bear to the whole insurance, whether valid or not, or by solvent or insolvent insurers, covering such property, and the extent of the application of the insurance under this policy or of the contribution to be made by this company in case of loss, may be provided for by agreement or condition written hereon or attached or appended hereto. Liability for re-insurance shall be as specifically agreed hereon.*

(s) *If this company shall claim that the fire was caused by the act or neglect of any person or corporation, private or municipal, this company shall, on payment of the loss, be subrogated to the extent of such payment to all right of recovery by the insured for the loss resulting therefrom, and such right shall be assigned to this company by the insured on receiving such payment.*

(t) *No suit or action on this policy, for the recovery of any claim, shall be sustainable in any court of law or equity until after full compliance by the insured with all the foregoing requirements, nor unless commenced within twelve months next after the fire.*

(u) *Wherever in this policy the word "insured" occurs, it shall be held to include the legal representative of the insured, and wherever the word "loss" occurs, it shall be deemed the equivalent of "loss or damage."*

(v) *If this policy be made by a mutual or other company having special regulations lawfully applicable to its organization, membership, policies or contracts of insurance, such regulations shall apply to and form a part of this policy as the same may be written or printed upon, attached, or appended hereto.*

(w) *This policy is made and accepted subject to the foregoing stipulations and conditions, together with such other provisions, agreements, or conditions as may be indorsed hereon or added hereto, and no officer, agent, or other representative of this company shall have power to waive any provision or condition of this policy except such as by the terms of this policy may be the subject of agreement indorsed hereon or added hereto, and as to such provisions and conditions no officer, agent, or representative shall have such power or be deemed or held to have waived such provisions or conditions unless such waiver, if any, shall be written upon or attached hereto, nor shall any privilege or permission affecting the insurance under this policy exist or be claimed by the insured unless so written or attached.*

(x) IN WITNESS WHEREOF, *this company has executed and attested these presents this*..... *day of*.....19..

(y) *This Policy shall not be valid until Countersigned by the duly authorized Agent of the Company at* . . . . . .

. . . . . .

. . . . . *President*

. . . . . *Secretary*

(z) *Countersigned by* . . . . . .

Agent.

Explanation of the Standard Policy. — Attention may now be directed to some of the more important provisions of this standard policy, reserving for a later discussion the subjects which pertain to the settlement of the loss.

In the opening statement, the person insured, the length of the insurance, the consideration and the property, as to description and location, are covered.

The Personal and Time Element. — The contract is a personal one. Persons are insured against the loss of their property, and any change of ownership in the property results in a termination of the insurance with a right of refund for such part of the premium as has been paid, which has not been earned by the insurer. The duration of the insurance is fixed from a stated day at noon until a certain later day at noon. Since standard time has come into general use in business transactions, the noon stated in most cases refers to twelve o'clock standard time at the place where the property is located. Owing to the difference in opinion on this point and the various interpretations by the courts as to the meaning of "noon," some states have specifically defined in laws this word. The difference in standard time between two places, as for

example the location of the company and the location of the property, is amply sufficient for a fire to occur.

Policies are written for one to five years. In 1914 of the one hundred and ninety-one joint stock companies reporting to the state of New York, the following was the distribution of their business:

Policy Duration	Amount
One year or less	$17,037,299,417
Two years	487,310,936
Three years	27,048,883,742
Four years	378,553,308
Five years	11,060,811,926
Combined term business	38,975,559,912
Total amount coveredj	56,012,859,329

Direct Loss. — The insurance is against *direct* loss or damage by fire. Losses may occur to buildings and contents due indirectly to fires, and not infrequently have the courts been called upon to decide this point. A fire in an adjoining building may cause, indirectly, loss to the property and its contents. The fire may be a secondary cause or an effect, as when a cyclone or an earthquake wrecks a building and a fire breaks out which burns a demolished building and its ruined contents.

The maximum amount of the insurance is stated. The greater number of fires cause only partial losses. The contract is one of indemnity: that is, the payment should not exceed the value of the property destroyed. It is a general principle of all insurance that the insured should in no manner gain from the insurance contract. Otherwise a necessary burden and an existing risk is increased for all who by a system of coöperation are seeking to decrease the burden. It is true, as will be shown

later, that the policy may not represent the full value of the property. This is a matter of contract between the insured and insurer.

Location and Character of Property. — The property is described as to location and character. It has a fixed location, for the contract specifies the insurance is on the property "*while located and contained.*" The first part refers to immovable property such as buildings, in which a difference as to its location even in a particular city may have great significance. One building may have near it a frame structure or other extra hazardous exposure. The second part of the description refers to movable property. In the ordinary policy the insurance neither follows the owner nor its changing location. The removal of goods from one building to another may materially increase the hazard, and except when there is a floating or blanket policy, the insurance terminates with a change in the location of the goods.

Indemnification. — The company is liable only for the actual cash value of the property at the time of the fire, for the insured should receive not what he has not lost, but only indemnification. He buys insurance not as an investment with the expectation of deriving a dividend or profit from his expenditure but rather with the object of assuring himself that he may regularly continue his business from which he derives his profit. The large flour miller, who contracts in advance with a wheat broker for a supply of wheat which he may transform into flour for sale and thus derive a profit from his business of manufacturing flour and not from speculating in wheat, is essentially buying insurance of a kind. So the property

owner should purchase insurance not for profit but for security. It will be shown later that a form of insurance, called profit insurance, is in process of development, but it is quite different from fire insurance, which is indemnity for loss which is likely to come to the individual, wholly remote from any act on his part.

Conditions Voiding the Policy. — The parts of the policy enumerated as (*c*) and (*d*) refer to the conditions under which the policy becomes void. Concealment or misrepresentation of facts, many of which can be known only to the insured, make the policy void. There is not, as in life insurance, an incontestability clause, since the insurer is even more dependent upon the good faith and honesty of the insured in fire insurance than in life insurance. To verify ownership of property, to inspect all property minutely, to discover facts which are known to the insured and which he may reasonably be expected to disclose to the insurer as the basis of the contract, would require a very large addition to the already large expenses of conducting the fire insurance business.

The answer to these questions relating to the material facts of the risk and its ownership are applied by the courts as warranties and not as representations. The Supreme Court of the United States has distinguished warranties and representations in this connection as follows: " The difference between a warranty and a representation is that a warranty must be true, while a representation must be true only so far as the representation is material to the risk; and it is material when a knowledge of the truth would have induced the insurer

to have refused the risk or to have charged a higher rate of premium."

In the paragraph marked (*d*) there is stated a number of circumstances which void the policy unless permission is obtained to do the act therein prohibited. The granting of some of these permits is a matter of mere formality, but in the absence of such permission, disputes arise which often the court is called upon to determine. This permission takes the form of a rider or permit which is attached to the policy. It is important for the company to know if there is any other insurance on the property. The moral hazard may otherwise be present in a large degree. This clause should be considered in connection with clause (*r*), in which the company assumes liability only in proportion to the whole amount of insurance in case of a partial loss. Both clauses are intended to prevent the insured from receiving more insurance than his actual loss; for, as has been previously shown, insurance is not essentially a quantitative thing which can be purchased. Indemnity is the thing sold, and not insurance by the hundred dollars' worth, as it is often popularly supposed. Every dollar's worth of insurance paid to the insured over and above the property destroyed is paid by other property holders. Thus collecting insurance in excess of loss became a refined method of theft, which unfortunately is oftentimes defended by property holders and state legislatures by enacting laws which make such a practice possible.

Each of the other circumstances which in this paragraph (*d*) void the policy in some manner increase the hazard. Operating factories at night, repairing buildings,

the storage or use of explosive material, placing a mortgage on the property, permitting the building to remain unused or unoccupied, each operates to increase the physical or moral hazard of the risk. Some of these prohibitions may be the subject of permits, as for example provisions for the repair of buildings. The mortgage clause is very important and will be discussed in the succeeding chapter.

Vacancy. — When a building becomes "vacant or unoccupied" has been a subject of frequent litigation, but the object of the prohibition is clear. The absence of individuals from a property increases the hazard, since not only attention may be given to a building by the occupiers which will prevent a fire, but if one breaks out, the presence of a dweller often serves to prevent a serious loss. Vacancy permits are granted. They are in general of two kinds. First, that which permits a vacancy during a specified time while there is a change of tenants, and second, that which permits an absence from the property by its owner. Whether the employment of a caretaker, who daily or less frequently inspects the property, operates to keep the policy in force without such a permit, has been a subject for adjudication.

Paragraph (*e*) limits the liability of the company for certain well-established reasons. The hazard at times of riot and war may become much greater. It may get beyond the control of either insurer or insured. The hazard is likely to be beyond that contemplated by the insurer. The insured is expected to use all reasonable care to protect his property at the time of a fire either in the property insured or when it is exposed. This is in

harmony with the whole theory of fire insurance, which is intended to indemnify property owners for losses suffered beyond their control.

Fire as a consequence of lightning is usually covered by the ordinary fire insurance policy as now written. The company is not liable for fire resulting as an effect of the collapse of the building, due to an earthquake, cyclone, or other natural causes. These are neither a kind of physical nor moral hazard which have had consideration in the establishment of the rate. There are other policies which grant insurance against some of these occurrences.

Paragraph (*g*) excepts certain articles from insurance unless liability has been distinctively assumed.

Paragraph (*i*) establishes the agency relationship in order to fix definitely the liability of the insurer. The fire insurance agent is legally the representative of the company and binds the principal by his acts. He has much more power than the life insurance agent. He issues policies, and therefore the company reserves the right of deciding who shall be authorized to assume liability for it.

Cancellation. — Paragraph (*k*) provides for cancellation by both parties to the contract. It frequently happens that both insured and insurer desire to do this. The insured may sell the property and wish a return of the unearned premium. The insurer may discover an increase in the moral hazard and desire to return that part of the premium which it does not wish to earn.

Removal of Property. — Paragraph (*m*) refers to the insurance on removed goods. While another clause requires the insured to use all reasonable means to save

the property at the time of a fire which necessitates a change in its location, yet a limit of time is placed as to the duration of the insurance in the new location. The removal of the property may well have caused a change in the hazard, and it is assumed that a period of five days is sufficient for the insured to make provisions with the insurer for a rate of charge which will be an expression of the new hazard.

Paragraph (*w*) refers to waivers, permits, and other exceptions to the body of the contract. They must not only appear as a written in or attached portion of the contract, but must also be properly signed and accepted by the company. Certain subjects in the policy may be a matter for waiver; others are not, and the agent has no power to exceed his authority by granting such permits.

The remainder of the policy provides for the date of acceptance, the signature of the company and its representative.

Riders. — Clauses in the form of riders may be attached for the purpose of waiving or altering certain policy provisions. They frequently appear in the policy, and in harmony with a long-accepted principle of law in interpreting contracts, anything written on or attached to the contract takes precedence over the printed part of the contract referring to the same subject. It must be understood, however, that the agent must act within the limits of his authority, and also that those parts of the policy which clearly set forth limitations and methods of procedure do not admit of alteration. Whether an agent acting " under the color of authority " may bind

the company, has become at times a matter for the court to decide. The discussion of the remaining portions of the policy, which refer to the settlement of the loss, is deferred to later chapters.

In addition to the ordinary fire insurance policy, there are several other forms or rather special forms of this standard policy. Among others, the following may be mentioned:

The Specific Policy. — The Specific Policy, which is said to be of specific coverage, as contrasted with general coverage. This policy protects property which has a definite location. It may be property of a single amount at a single point or property of different amounts located at different specifically enumerated locations with a definite amount of insurance on each part. A policy with $10,000 insurance on a building, or one with $5000 on the building and $5000 on the contents or $2500 on each of two buildings and $2500 on the contents in each building, would be examples of specific policies.

The Blanket Policy. — The Blanket Policy is one in which there is a certain amount of insurance granted, which may cover the building and its contents or two or more buildings and their contents with no specific distribution of definite amounts on the buildings and the stock of goods.

The Open Policy. — The Open Policy or Running Policy is one which is usually applied to merchandise, the units and amounts of which are continually changing. It may be in its application either a specific or a blanket policy. The rate of premium may change with the changing character or quantity of the merchandise. The

stock of goods in warehouses is continually changing, and this type of policy does not necessitate the writing of a new policy with every change in the property to be protected.

The Floating Policy. — This policy indicates its character by its name. It is used to apply to goods whose character and location are continually changing, as, for example, merchandise in transit. Its terms are broad, and its specific application as to the amount covered is largely a matter for adjustment at the time of a loss.

There are other kinds of policies which protect property against losses due to other than *direct* losses by fire, but which indemnify the owner for losses indirectly resulting from the fire. The following forms may be noted:

Use and Occupancy Policy. — This type of policy promises to have more extensive application as its advantages become recognized and experience supplies more data for its proper application. Its purpose may be more clearly understood by considering the situation which confronts a producer when a fire has occurred than by attempting to define the policy. The fire which occurs in a plant may not only destroy the physical plant, but it interrupts the business. The product is not sent regularly to its purchasers. Many expenses, such as interest on the capital invested, many of the ordinary expenses, such as wages, taxes, and many of the fixed expenses of the business continue whether the plant is or is not running. The owner is receiving no income from his business out of which he may pay these expenses. The period of interruption represents losses other than those due to the destruction of the physical

property. Use and occupancy policies insure against these losses arising from interrupted production. The proceeds of the policy may be used to lease another plant, or rent another building, or to purchase new machinery and thus to supply customers more quickly with their goods. Such a policy does not of course guarantee profits in the strict sense. It is product rather than profit which is insured.

These policies are written with a maximum amount which will be paid and also with a specified sum which will be paid per day during the interruption of the business. Manifestly great care is exercised in deciding the class of producers to whom such a policy can be granted. The firm or individual must be one of character with a secured business and such organization of its finances and accounting methods as will make it possible to arrive at the real losses suffered. The amount of the policy is some percentage of the business transacted, 10 or 15 per cent being a common percentage to insure. But the character of the plant and goods and the rapidity of the turnover cause a considerable difference in this amount, as well as in the rate at which the risk is written. Provision is often made in these policies for the change in the amount of products or goods sold, due to fluctuations in business conditions, seasonal demand, or weather conditions.

The Rent Policy. — Rent Insurance is of comparatively recent development, but the growth of cities and the large investments in renting properties promise an increasing use of this form of the fire insurance policy. This policy is intended to protect the owner of property against the

loss of his rents, due to a fire. The loss is based upon the actual rent lost by the fire and is computed from the time of the fire to that time in which it would be possible to repair the property and put it in condition for inhabiting. Usually the insured is required to carry insurance on the rents to an amount equal to the actual rents of the whole property, and if at the time of the fire this total insurance is less than the actual rents, the insured is held to be an insurer to the amount of such deficiency. He thus bears his proportionate share of the loss; that is, he becomes a coinsurer. Such policies have ordinarily little of the moral hazard in them, since the renter and not the owner is the occupier. Rents are also definite quantities, and the damage or loss can easily be ascertained. The salvage is therefore likely to be greater than in ordinary fire insurance policies on buildings and contents.

Leasehold Policy. — Leasehold Insurance is a form of insurance which is designed to protect the lessee both in respect to his losses in his sub-leases and in what he pays the owner; or it may be used by a person who purchases land and erects a building on it for the purpose of renting. Such policies are very complex, owing to the great variation in the relationship of owners and occupiers of land and buildings in the modern industrial city. The moral hazard may be very great in this type of policy.

Profit Policy. — A more recent kind of policy is that designed to insure the profits of a business. Use and occupancy insurance is not intended to cover profits, although such insurance would not be written by a careful company on a plant or business which was not making a profit. It is evident that a policy to insure profits can be

written only on individuals and firms of the best character and also only when the most complete and detailed facts regarding the business are known. The moral hazard in such policies may become very great, since if it were possible to guarantee profits absolutely, many producers would be quite willing to purchase insurance as the least expensive means, both in money outlay and efforts, to receive such profits.

All these forms of policies — Use and Occupancy, Rent, Leasehold and Profit — are closely related to the ordinary fire policy which, it has been shown, covers only the losses due directly to fire.

Sprinkler Leakage Policy. — Another form of policy is that designed to protect against losses due to the leakage of automatic sprinklers. These sprinklers, as will be described later, are installed in buildings for the purpose of extinguishing a fire in its early stages. In such a system, the valve may open or a pipe may burst and do great damage to the building or its contents. Any damage done by the water from these pipes at the time of a fire is of course covered by the ordinary fire policy, since this is a loss due directly to fire. The Sprinkler Leakage Policies cover the damages due to the unexpected losses growing out of the abnormal operation of the sprinkler equipment.

Tourists' Policies and Common Carriers' Liability Policies are of many kinds, but are examples of Floaters' Policies. Thus from a relatively simple contract the fire insurance contract has evolved in a truly evolutionary manner into highly complex and simple forms. That is to state, the fire insurance policy is being applied to protect

against many losses other than those due directly to fire, and at the same time, there is a growing uniformity and standardization in each of the particular forms. Doubtless it will receive new applications as new conditions arise.

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CHAPTER VIII

THE LOSS AND ITS ADJUSTMENT

Importance of the Settlement Clauses. — The settlement of the loss is the test of the policy contract both from the viewpoint of the insured and the insurer. The risk has been assumed by the insurer for a consideration which is presumed to measure it correctly, and the insured has given this consideration because he expects to receive full payment in the event of a loss. It is chiefly in connection with this settlement of the loss that disagreements between the parties to the contract arise. This situation is largely responsible for the numerous appeals to the courts as a final arbiter of the fire insurance contract. The standard policies, therefore, have attempted to make as explicit as possible each of the provisions of the contract which apply after a loss has occurred.

In the previous chapter, the chief " conditions precedent " have been stated and explained. The " conditions subsequent " are now to be discussed: first, as to what they are, and, second, as to some of the more important judicial interpretations which have been made of them. This second phase of the subject is a very large and complex one, inasmuch as insurance is a subject for regulation in each state. A relatively small number of the cases of this character reach the federal courts. The state courts frequently differ in their application of the

same principle. In other cases this difference results from a difference in the laws of the states on the particular subject.

Basis of the Settlement. — In section (*b*) of the policy the basis of the loss settlement is stated to be the actual cash value of the property at the time of the fire or the damage which has been done to it less any depreciation which has occurred. This cash value is based upon its cost value to the insured and not its selling value. Other forms of insurance such as Use and Occupancy and Profit Insurance protect the insured in other respects. The ordinary direct-loss fire insurance policy is indemnity for property destroyed, not for anticipated profits to be derived from its continued use and sale. When the loss occurs, the insurer may make settlement by either one of two means. He may pay the monetary value to the insured or he may " repair, rebuild or replace the property lost or damaged with others of like kind and quantity." This second option is not frequently used, first, because the insurance company is not a producer of goods nor is it organized to deal in goods and materials; and, second, because there exists a large opportunity for difference of opinion as to what would be " property of like kind and quality." In some cases companies have chosen to avail themselves of this option and later have found that the judicial opinion did not agree with their action. The result was that the insured became possessed of the replaced property and also was permitted to secure the monetary value of the destroyed property.

Time Limit for Settlement. — The period established for the payment of the loss is sixty days " after due notice,

ascertainment, estimate, and satisfactory proof of the loss." This is to afford a sufficient period for determining the loss. As a matter of practice many claims are paid within this period, while others are paid long after this period. The policy states that the loss is payable sixty days after this proof and not that it must be paid at that particular date.

Clause (*t*) states that no claim can be made before the above conditions have been met, and further, that any suit or action on the policy cannot be instituted unless it has been entered within twelve months next after the fire. This is for the purpose of facilitating loss settlements, for it is to the interest of both parties that the claims be settled as quickly as possible. The insured should be paid the claim to enable him to rebuild or to restore his property, and the insurer is interested in having the claim made immediately after the fire when the condition of the property and other facts in connection with it can most easily and completely be known. The courts have been liberal in applying this part of the contract, especially in those cases where no evidence of fraud or undue negligence was shown on the part of the insured. The insurance contract has been made by the insurer, and it is generally interpreted and applied in the interests of the insured. Every reasonable and fair means will be used to aid the insured in collecting his claim.

Conditions Subsequent to Settlement of a Claim. — In enforcing this liability on the insurer, there are, however, enumerated steps in the procedure which are set forth in the policy. These are required on the part of the insured and constitute the chief " conditions subsequent " to the

collection of the claim. In the first place, clause (*e*) prohibits any abandonment of the property by the insured. He must use all reasonable means to protect and preserve the property. In clause (*m*) it is provided that when in the fulfillment of this requirement the property is removed to a place of safety, the insurance is extended to cover the property in its new location for a minimum period.

In the second place the insured is required in clause (*n*) to protect the property from further loss. He must notify the company, which usually takes the form of notifying the agent of the company, that a loss has been suffered. He then makes out a loss statement, and supplies the company with other information, such as the cause and the time of the fire, his interest in the property, the debts upon it, the amount of other insurance upon it, any change in occupancy or ownership since the contract was made, and much other detailed information.

Disagreement as to Loss. — It is in connection with the loss statement as to value of property and goods that disagreements arise between the insured and the insurer. These differences often result from honest difference of opinion; at other times because the insured has no data upon which to make an accurate loss statement; and at other times through dishonesty of one of the parties in an effort either to collect more insurance than the actual loss or to escape the payment of a just claim. The loss or damage to the building is a physical fact and is often easier to determine than the loss on the goods or contents. But even in the case of a building loss which is partial,

difficulties arise. The stone facing may have spalled as a result of the fire without in any way weakening the wall. It may be repaired at a small expense, but the insured may wish to claim a complete loss. The insured at the time of the fire is disposed to magnify his loss, however honest he may be, due to the fact of the sudden and impressive character of the loss. A gradual loss, as, for example, a decrease in his business, would not loom so large in his mind. However numerous the opportunities for disagreement in the case of building losses, the difficulty of arriving at a fair settlement of the loss on contents may be much greater. The insured is often unable to supply documentary evidence of his loss in the form of accounting records, bills of invoice, and other similar evidence. These may have been destroyed in the fire, or the insured may have kept no such complete record. The property is often destroyed so completely that no evidence of value can be secured. The insured is in the position of advantage, since he usually knows what his probable losses are. His statements may in some cases be verified by the records of those who sold the goods to him, but even then the amount of the goods which have been sold as compared to the quantity which has been purchased is a fact known only to the insured, if known to any one. The moral hazard may therefore be very great. The only question to be answered for the purpose of setting the loss is what was the value of the goods at the time of the fire. The loss on goods may be, according to the common classification, "trifling," "slight," "considerable," or "total," and in this classification there is great opportunity for difference of opinion.

Methods of Determining the Loss. — In arriving at the actual sum to be paid for contents there are three methods provided in the standard policy: (*a*) agreement, (*b*) appraisal, and (*c*) the acquirement by the insurer of the stocks of goods at their appraised value. In the settlement of a loss, either on a building or its contents, the work of the adjuster is important. The adjuster may be a person who does this work as a regular business. He is not the employee of any company, but sells his service either to the insurer, or in some cases, when large property values are concerned, he undertakes the settlement of the loss for the insured. The adjuster is, however, more usually a representative of the insurance company. There are adjustment bureaus, organized, owned, and operated by the companies, located in the largest cities with branches in the smaller cities. Since several companies are usually represented on any considerable loss, each of the companies may agree upon one adjuster to represent them and thus save unnecessary outlays in settling the loss. In the smaller cities and in the rural districts the adjustment of losses is usually made by the regular agents of the insurance companies. An agreement is often made between the insured and the adjuster, either as agent or professional adjuster, for the settlement of the loss. This agreement may be reduced to writing or it may be oral. In the case of large losses it should always be a written agreement, signed by the insured and the insurer or their authorized representatives. In the case of minor losses or in the case of complete losses which do not involve large sums such an agreement is frequently easy to secure. In so far as a

complete record of specific losses can be furnished by the insured, the chances of reaching an agreement with the adjuster are increased. Book statements, invoices, bills of lading, and other evidences of loss are examined. Compromises are reached. Experts may be called in to pass upon values.

The Appraiser. — If, however, an agreement cannot be reached between the insured and the adjuster, the standard policy provides in clause (*p*) for the selection of an appraiser by the insured and the insurer. These two disinterested appraisers select a disinterested umpire. In some cases difficulty arises in this connection with respect to the fact of competency and disinterestedness of both appraisers and umpire. The insured may select an appraiser whom the insurer does not consider proper, either because he does not know the property, or because the insured wishes to have " a friend at court " in the person of an interested appraiser; or the insured may think the appraiser selected by the insurer is chiefly interested in an effort to see how well he can protect the company from paying the loss; or the two appraisers may have difficulty in selecting an umpire, since in actual practice this umpire must be satisfactory to the insured and the insurer and not primarily to the appraisers. The appraisers continue their work of arriving at the value of the property after this umpire is selected, and when disagreement arises, the decision of the umpire and either appraiser is binding. When the actual amount of the loss has been determined, the question may then arise of its distribution. This requires an examination of the terms of the contract with respect to the distribution

clauses, such as the average clauses, the three-fourths loss clause, the three-fourths value clause, the co-insurance clause, as well as an examination of the laws of the state in respect to valued policy laws. Other questions, such as the existence and validity of other insurance, the evidence of fraud, arson, incendiarism, and the interests of mortgagees, may also arise. The limitation of liability and the mortgage are discussed in the succeeding chapter.

Subrogation. — If the loss has been determined to the satisfaction of the insured and the insurer and has been paid, a right of recovery in favor of the insurer against a third party may exist. This is known as subrogation and is provided for in clause (*s*) of the policy. It is there stated that if the fire was caused by an act or the neglect of any person or corporation, private or public, the company shall have the right to recover the amount which has been paid to the insured. The right of such recovery is to be assigned to the insurer by the insured at the time of the payment of the loss. This is an important clause and has been a subject which has caused much litigation with variation in the practices of courts in different states and countries. It is affected both by the common law principles and by the statutory enactments, creating or limiting liability.

The doctrine of indemnity is the basis of this right of subrogation; that is, a person who causes by overt act or negligence a loss to another is liable for the damages suffered. The Supreme Court of the United States has stated:

"In fire insurance, the insurer, upon paying to the assured the amount of a loss of the property insured, is doubtless subrogated

in a corresponding amount to the assured's right of action against any other person responsible for the loss. But the right of the insurer against such other person does not rest upon any other relation of contract or of priority between them. It arises out of the nature of the contract of insurance as a contract of indemnity and is derived from the assured alone and can be enforced in his right only. By the strict rules of the common law, it must be asserted in the name of the assured. . . . In any form of remedy the insurer can take nothing by subrogation but the rights of the assured, and if the assured has no right of action, none passes to the insurer" [St. Louis I. M. & S. Ry. Co. *v.* Commercial Union Insurance Co., 139 U. S. 223].

The chief points herein made are that in this respect subrogation is a common-law right; it is a right of the insured, and that the insurance contract is one of indemnity. In respect to this last point, the courts have not all been uniform in their decision, although the weight of authority is decidedly in harmony with this view.

Subrogation frequently arises in connection with insurance contracts, not only in fire policies, but in life, accident, and other forms of policies. The question often arises in connection with the payment of premiums. An individual may pay a premium on a policy of another person, resting upon the right of subrogation for reimbursement. The general rule is that no one who is not in the position of a creditor or legal representative of the insured has any right of recovery under the principle of subrogation. It has been held that when one satisfies an obligation against a property against which he has a claim under the honest belief that it is necessary for him to do so in order to protect his interest, the right of subrogation may be permitted.

Assigning Right of Subrogation. — Since the right of subrogation is one belonging to the insured, it may be transferred to another person by contract. This is what occurs in the standard policy; that is, the right of the insured is transferred to the insurer upon the receipt of the payment for the loss. This liability for damages or recovery due to a loss may be created by law without any question of neglect being taken into consideration. Transportation companies are commonly made liable for loss or damages to goods or persons conveyed. This has been the cause of litigation at times when, for example, the insured has contracted with the common carrier that the latter shall have the benefit of any insurance paid to the insured. If the policy contract has no clause of subrogation in which this right of recovery of the insured against a third party specifically provides for its assignment to the insurer, the insurer is ordinarily precluded from recovery in the face of this specific limitation by the insured of his right of recovery. The Supreme Court has said [Phœnix Insurance Company *v.* Erie Transportation Co., 117 U. S. 312]:

"That the right of the assured to recover damages against a third person is not incident to the property in the thing insured, but only a personal right of the assured, is clearly shown by the fact that the insurer acquires a beneficial interest in the right of action, in proportion to the sum paid by him, not only in the case of a total loss, but likewise in the case of a partial loss, and when no interest in the property is abandoned or accrues to him.

"The right of action against another person, the equitable interest in which passes to the insurer being only that which the assured has, it follows that if the assured has no such right of action, none passes to the insurer; and that if the assured's right of action

is limited or restricted by lawful contract between him and the person sought to be made responsible for the loss, a suit by the insurer, in the right of the assured, is subject to like limitations or restrictions.

"For instance, if two ships, owned by the same person, come into collision by the fault of the master and crew of the one ship and to the injury of the other, an underwriter who has insured the injured ship, and received an abandonment from the owner, and paid him the amount of the insurance as and for a total loss, acquires thereby no right to recover against the other ship, because the assured, the owner of both ships, could not sue himself."

If, however, the policy contract has a subrogation clause providing that the insurer shall upon payment of the claim become possessed of the rights of recovery of the insured, and the insured, notwithstanding this provision in the policy, contracts with a third party to give up his right of recovery, such a contract will not be held to impair the insurer's right under the preceding contract. The insurer may by this act forfeit all his right of recovery. For example, a rate upon the carriage of goods is frequently determined in part by the risk assumed. If the shipper wishes to secure a lower rate, he may be willing to relieve the carrier of liability for loss and damage in order to secure his lower rate. If the policy of insurance contains a subrogation clause which gives to the insurer the insured's right of recovery, and voids the policy in the event that any restriction is placed upon this right, the insured is left without any right to recover from the insurer although it has been held by the Supreme Court of the United States [Inman *v.* South Carolina R. Co., 129 U. S. 128] that the right of recovery still exists against the railway company. The situation

may arise where the insured might be paid by the insurance company a certain sum and then under his right of recovery under the common law secure a sum from a third party, the two sums being together in excess of the value of the property destroyed. Thus arise the two doctrines of indemnity and subrogation and the courts differ somewhat in the extent to which they apply these two principles when they are in conflict. If, as in the case of the Supreme Court of the United States and some of the State Supreme Courts, the insurance contract is applied as one of strict indemnity, the insured is not permitted to recover any sum in excess of the actual loss. The insurer under this interpretation will always have the right to recover from the insured any sum which he receives that is in excess of the actual loss suffered.

Is the Contract One of Indemnity? — The arguments for considering the contract of insurance not one of strict indemnity were stated in a particular circumstance by the Massachusetts Court [King *v.* The State Mutual Fire Insurance Company, 61 Mass. 7 Cushing 1] when it said:

"The case supposed is this: A man makes a loan of money and takes a bond and mortgage for security. Say the loan is for ten years. He gets insurance on his own interest. At the expiration of seven years the buildings are burnt down. He claims and recovers a loss to the amount insured, being equal to the greater part of his debt. He afterwards receives the amount of his debt from the mortgagor and discharges his mortgage. Has he received a double satisfaction for one and the same debt? He surely may recover of the mortgagor because he is a debtor, and on good consideration has contracted to pay. The money received from the underwriters was not a payment of a debt; there was no priority between the mortgagor and the underwriters; he had not con-

tracted with them to pay it for him on any contingency ; he had paid them nothing for so doing. They did not pay because the mortgagor owed it, but because they had bound themselves, in the event which has happened, to pay a certain sum to the mortgagee.

"But the mortgagee, when he claims of the underwriters, does not claim the same debt; he claims a sum of money due to him upon a distinct and independent contract, upon a consideration paid by himself that, upon a certain event, to wit, the burning of a particular house, they will pay him a sum of money expressed. Taking the risk or remoteness of the contingency into consideration (in other words, the computed chances of loss), the premium paid and the sum to be received are intended to be, and in theory of law are, precisely equivalent. He then pays the whole consideration for a contract made without fraud or imposition; the terms are equal, and precisely understood by both parties. It is in no sense the same debt. It is another and distinct debt, arising on a distinct contract, made with another party, upon a separate and distinct consideration paid by himself. The argument opposed to this view seems to assume that it would be inequitable, because the creditor seems to be getting a large sum for a very small one. This may be true of any insurance. A man gets $1000 insured for $5, for one year, and the building is burnt within the year; he gets $1000 for $5. This is because, by experience and computation, it is found that the chances are only one in two hundred that the house will be burnt in any one year, and the premium is equal to the chance of loss. But suppose — for in order to test a principle we must put a strong case — suppose the debt has been running twenty years, and the premium is at five per cent, the creditor may pay a sum equal to the whole debt in premiums and yet never receive a dollar of it from either of the other parties. Not from the underwriters, for the contingency has not happened, and there has been no loss by fire; nor from the debtor, because, not having authorized the insurance at his expense, he is not liable for the premiums paid.

"What, then, is there inequitable, on the part of the mortgagee,

towards either party, in holding both sums? They are both due upon valid contracts with him, made upon adequate considerations paid by himself. There is nothing inequitable to the debtor, for he pays no more than he originally received, in money loaned; nor to the underwriter, for he has only paid upon a risk voluntarily taken, for which he was paid by the mortgagee a full and satisfactory equivalent."

It may be questioned whether the reasoning in this case is either an expression of correct insurance theory or good public policy. The premium in insurance is not intended to be and in theory is not precisely equivalent to the sum insured. Premiums do pay losses, but it is more true to state that past and present premiums pay the present losses. Insurance theory in any branch cannot be understood from the individual standpoint, for insurance concerns itself with what happens to the group, not to the individual. Insurance is not an investment in its proper sense for any individual. All its important principles which determine the payment which each insurer is to pay, are based upon factors and phenomena over which the individual as such is not presumed to have any control. If the individuals who are insured can by overt acts affect or determine the amount which is to be paid to them from the common fund, this invalidates all the calculations. The motives of men and the results of their future actions do not lend themselves to calculations or predictions which can be expressed in monetary units.

The calculations of insurance premiums do not include this kind of personal factor. Carelessness in the use of property may be penalized by a higher rate. Evidence of dishonesty and moral hazard of a personal character

may result in a cancellation of the policy. Insurance is not a gross quantity which can be purchased at so much per unit, as in the case of ordinary products.

In the second place, this court opinion is opposed to the promotion and protection of public policy by the insurance contract. Insurance is not a matter in which individuals should be permitted to contract freely. No one of the insured group should be permitted to secure a gain from the insurance contract, for this is opposed to the spirit of insurance, which is but an association of individuals formed to share each other's losses. Any gain or profit secured by one member of the group is obtained at the expense of the other members. This is a condition which insurance does not contemplate. It prostitutes insurance into a wager or a gamble whereby the payment of a small sum, as in the case of the mortgagee in the quoted decision, makes it possible to obtain a large sum which is in excess of any real loss that he has suffered.

The fire insurance policy is one of indemnity, and in order to guard against any other application of the contract, the policy should contain a definite provision whereby neither the insured, mortgagee, nor another having an insurable interest in the property can recover more than the property value actually lost.

The subrogation clause is therefore of greatest importance in making in actual practice the insurance policy one of strict indemnity. Notwithstanding the difference among courts in applying this principle of subrogation, there is an increasing tendency to apply it in a manner to secure the application of this indemnity principle. The peculiar circumstances and facts of each case determine the character of its application.

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CHAPTER IX

LIMITATION OF LIABILITY AND DISTRIBUTION

In addition to the ordinary clauses in a fire insurance policy which limit the liability of the company, there are other special clauses more definitely limiting the liability, either on account of the particular character of the property insured or because of a desire to assess the fire insurance charge equitably among the insured. No other clauses have occasioned so much discussion and criticism and led to so much legislation which has prevented a fair distribution of fire insurance cost.

Specific Clauses Limiting Liability. — The most important clauses of this description are the Three-fourth Value Clause, the Three-fourth Loss Clause, the Average Clause, and the Coinsurance Clause. It will aid in an understanding of the purpose of these clauses and the discussion of Valued-policy Laws, Mortgage Clauses, and Insurable Interests which follow, if the characteristics of the fire insurance rate are recalled. While the rate is not exactly synonymous to an ordinary tax, as fire insurance officials frequently argue, yet its similarity to a tax is greatest in connection with these clauses and the laws which have resulted from the effort of insurance companies to incorporate them in the policies. That is to say, the loss by fire represents so

many dollars of property value which must be contributed by those property owners who have insured property. The amount of revenue demanded by the government represents so much money which must be contributed by the owners of wealth of a taxable character. Assume that the general rule of collecting this tax is, that each should pay on the basis of what he has and on its full or a certain uniform value; so the insured should contribute his insurance tax on a basis of the protection he secures, the cost of which or the rate being determined by the hazard of his risk and the amount of the risk. Any excess protection that he secures, or any sum paid to him over and above his actual loss, comes from this general fund and represents an unwilling gift from the other insured members. The fire loss must be met and the insured meet it by the payments of premiums. Any one member secures this protection only by the existence of many members, and any deficient payment by one, means an excess payment by another or by a class. This results in a discrimination in the charge.

The Three-fourth Value Clause. — The Three-fourth Value Clause is one which provides that in the event of a loss the company is liable to an amount not to exceed three fourths of the actual cash value of the property, and if other policies are in existence, then for only its pro rata share of this value. The prime purpose of this clause is to prevent overinsurance, just as the coinsurance clause is intended to encourage a reasonable amount of insurance. It may be thought that no property owner would be willing to pay in premiums a sum

of money in excess of what was necessary to secure adequate protection for his property. But when it is remembered that the premium is a comparatively insignificant sum in respect to the total value of the property, especially when the policy is taken for a short period, such as a year or less, and especially that the amount in excess of the premium necessary to secure full protection is small, the disposition to overinsurance does not seem to be so unexplainable. Nor does this disposition to overinsure always represent a conscious desire to defraud the company and other policyholders. After making all due allowances for the deliberate acts of overinsuring for the purpose of gain, there still remain conditions under which there is a natural tendency in this direction.

The owners of unprotected property, that is, property in rural districts and villages where there is an absence of fire and water departments, are frequently disposed to take out insurance in excess of the full value of the property. This may be due in part to the fact that a loss to such owners would often be very serious. Because of this direct personal result they are willing to pay the increased amount for surplus insurance. Such owners are not usually guilty of any conscious wrong conduct. They and others who overinsure think of insurance as a thing that is sold in quantity at so much per $100; or in other words, that they can buy the right to receive so many dollars of insurance by the payment of a certain rate per unit of the insurance. They seldom think of the rate and amount of insurance as being determined by their property, its condition, and use.

The company is considered as the source of supply. It is farthest from their minds that they themselves have a monopoly of the supply. Whether this over-insurance results from the preceding mistaken but not criminal notions, or whether it is a result of a deliberate act of property owners in cities, villages, or rural communities to secure overinsurance, there is no question as to its effect on the moral hazard and its final effect on the loss ratio. There results often an inducement to be careless in the use of the property, and in case of dishonesty to produce by criminal carelessness or overt act a loss. The resulting fire not only destroys the property with overinsurance on it, but it may also spread to adjoining property and occasion losses, both on insured and uninsured property. The Three-fourth Value Clause thus makes it to the interest of the insured to care for his property. It has a significance not only for all insured property owners, but also for other property owners and the public at large. It reduces the moral hazard among holders of insured property, and this contributes to producing a fair burden in the charge for each. It reduces the hazard for those whose property is not insured, and it is in harmony with good public policy because it is in opposition both to criminal acts and undue carelessness in the use of property.

The Three-fourth Loss Clause. — Another clause which was intended for the same general purpose was the Three-fourth Loss Clause; that is, the company was not liable for a sum in excess of three fourths of the total loss. In this clause, loss and not value of the property was the measure of liability, but in either

case the effect was to compel the owner to carry a part of his insurance. These clauses are not now in general use, due in part to the laws of some states and in part to the coinsurance clause, the relation of which to these clauses will be discussed later. This effort on the part of the companies to limit their liability to a certain proportion of the value of the property led to much opposition on the part of property owners and in some states to the enactment of laws designed to prohibit their use.

Valued-policy Laws. — The laws which were enacted to prevent the preceding clauses were called Valued-policy Laws. Wisconsin, in 1874, was the first state to pass such a law, and later many other states enacted a similar law. These laws were honestly but mistakenly intended to right an unquestioned evil. The history of their enactment and operation aids in explaining in part the present difficulty in securing agreements between the public and insurance officials in respect to rates, taxation, and other regulatory aspects of the insurance business. The condition which led to the enactment of such laws is well described by A. Dean in his " The Rationale of Fire Rates " as follows:

"Thirty years ago farm property formed a much larger proportion of our aggregate national wealth than it does to-day. At that time the tremendous growth of our manufacturing and transportation facilities, and the concentration of population in our cities, was just beginning. The fire companies were then deriving a steady revenue from the insurance of farm property, which as a class was considered doubly desirable, because it had been steadily profitable, and because it was free from the dangers of sweeping conflagrations which in every city jeopardized the entire assets of a company.

"Every company wrote farm business freely through its local agents, under the same liberal conditions as other classes of property. The volume of farm business and its exceptional desirability led some managerial genius to conceive the idea that he could largely increase the premiums of his company from this source by sending out traveling solicitors through the country districts, after the manner of the lightning-rod, chain-pump, and patent-churn people.

"As these solicitors were selected for their glibness and push rather than for their character or knowledge of the business, and as neither their judgment nor honesty could be trusted, the plan was adopted of taking payment in notes instead of cash. An elaborate application containing a cut-throat warranty was prepared, under which the assured surrendered every equitable right and became responsible for any over-valuation of his property; and to make assurance doubly sure every policy contained a printed stipulation that the company should be liable for only three fourths of any loss that might occur. This plan relieved the company of any necessity for the services of local agents, selected for their honesty and skill. There was no cash to handle; no danger of defalcations and (with a policy condition which compelled the assured to carry one fourth of the insurance for which he had paid) no danger from overinsurance. Under this jug-handle arrangement it became possible to sell fire indemnity, like tinware, by peddling.

"The farmer is generally ready to purchase anything he can pay for with a note, and as 'a business getter' the plan was a success. In a few years the agricultural regions swarmed with traveling solicitors ready to sell a farmer a patent churn, windmill, stump puller, or fire policy with the same glib disregard of truth. These tramp solicitors were, as a rule, ignorant, unscrupulous adventurers. They were paid by a percentage of the premiums, and it was, of course, to their interest to make as large a sale of indemnity to every buyer as possible, regardless of his actual needs. The companies themselves could afford to be indifferent to the amount of insurance a man procured, as misrepresentations in

application could be used to deny liability, and in any event, the assured could not collect more than three fourths of his actual loss. In time, the adjustment of losses revealed the full iniquity of this plan, and in every farming community fire insurance came to be regarded as a swindle. Of the hundreds of fire institutions then doing business, not over four or five at most were implicated. Nineteen companies out of twenty vainly protested at the buccaneering methods of these so-called farm companies, believing they would bring the entire business into reproach and subject it to inimical legislation. These apprehensions were well founded. The industry of fire insurance became non grata in every state where the farmers had the controlling voice in legislation, and the entire insurance community has been made to suffer ever since for the sins of a few unprincipled adventurers.

"The American farmer to-day is the hereditary foeman of fire insurance; he makes no distinction between companies on account of character, record, or methods; the few companies whose solicitors he learned to distrust in the palmy days of farm insurance are typical of the whole body of fire underwriters. In his ignorance of facts, the readiest remedy that occurred to the agriculturist was to wipe out the whole iniquity with a sweeping law which required that the amount of insurance should be taken as the real value and measure of loss, regardless of policy conditions or actual loss."

This situation was a product of competition full and free in the fire insurance business and is but one illustration of the many evils which such a system has brought in its application to the insurance business with respect to ratemaking. The acts of some companies are doubtless responsible in large part for the public disfavor, just as the acts of some railway officials or big business officials are responsible for the public suspicion in respect to their methods. In the opposition created there has resulted loss for both parties. This

Valued-policy Law where not already adopted by some states is introduced from time to time as a bill in the legislature, although there is a growing sentiment against the principles of the law, and a limited number of states have repealed such laws. It is not easy for the citizen not informed in insurance to understand why the law is opposed to the fundamental theory of fire insurance. But this is true primarily because it nullifies indemnity as a principle in fire insurance.

Assigned Bases for Valued-policy Laws. — The defense of this law in the state legislature and among property owners usually is, that it is the business of the fire insurance companies and its agents to satisfy themselves as to the amount of insurance which they wish to grant on a property. This could not be done in actual practice without very greatly increasing the present large expenses of the business, and this added expense would necessarily have to be borne by the property owners. Even granting that the most complete provision should be made for inspecting all property to be insured, there would need to be frequent reinspections during the continuance of the policy. The value of property is continually changing, due to changes in business condition, the growth of cities and communities, to natural depreciation, and other causes. But the most detailed system of inspection must rely upon the property owner for some kinds of information. He is in a position to supply all the information in the case of some kinds of risks, and this without any cost to himself. If the insurer is considered the buyer of the risk, the principle of *caveat emptor* has no place in the transaction.

The insured by the act of sale is doing a deed the consequences of which are not limited to himself. To the extent that he aids in determining a fair fire rate for his insurance and coöperates in securing only indemnity, to this extent he is doing a service to all other owners of insured property. That the insurance company often resists the payment of claims is no justification for such a law. To the extent that this is true, whether fairly or unfairly done, there are remedies in the courts. Judges and juries cannot be said, on the basis of past records, to favor the companies at the expense of the insured. The legislatures and the state officials are also empowered to supervise the business and to protect the insured. The recommendations of a committee appointed by the legislature of North Carolina to investigate the fire insurance business may be quoted as expressing the more intelligent opinion and tendency in respect to Valued-policy legislation. The committee did not recommend the enactment of such a law because: (*a*) it changes the nature of the contract as one of indemnity to an absolute promise to pay the amount fixed in the contract. (*b*) As by the statistics ninety per cent of the losses are partial and only ten per cent are total, the contract would remain, as now, practically one of indemnity. (*c*) The tendency would be to increase the number of total losses and increase the fire waste. (*d*) It increases the total cost of insurance contrary to the general desire to reduce this cost.

The Average Clause is sometimes considered, especially in this country, as synonymous with coinsurance, and sometimes to refer to that clause in the policy

which provides what part of the total sum insured shall be applied to specified parts of the property both in respect to the units of the property and their location. In this sense it is purely a clause, defining the distribution of the liability and not limiting it. This last use is the more correct one.

The Coinsurance Clause. — The Coinsurance Clause has caused as much discussion and legislation as the Valued-policy Clauses. Just as the purpose of the latter was to prevent overinsurance, so the former — coinsurance — is intended to prevent underinsurance. The clause takes the form of a statement which provides "in consideration of the reduced rate at which this policy is written, it is expressively stipulated and made a condition of the contract that in the event of loss this Company shall be liable for no greater proportion thereof than the amount hereby insured bears to x per cent of the actual value of the property described herein at the time when such loss shall happen nor for more than the proportion which this policy bears to the total insurance thereon."

The Fire Insurance Rate and a Tax Compared. — That is, under the coinsurance agreement the insured is made insurer with the company for that amount of insurance which is below an agreed-upon percentage of the value of the property. If the cost of the loss of property by fire is to be equitably assessed, it is just as important that property be insured to an agreed-upon value or the rate adjusted for the deficiency as it is that it be not overinsured. The rate in fire insurance depends not only upon the amount of the fire loss, but also for

individuals upon the percentage of value that is insured. Suppose a city had decided that it must raise $1,000,000 for public expenditures and that the property value to be levied upon was $100,000,000. This would necessitate a tax rate of one per cent. Now if this tax is to be levied as a proportional one, that is, each citizen is to pay in proportion to his property, it is necessary if equity is to be secured that the property of each be returned for taxation at its true and full value or at some uniform value. If one half the property owners return their property at one half its value, they will pay into the treasury only $250,000, while the other half of the citizens will pay $500,000. If the first group are permitted to reduce their valuation for tax purpose, then the rate must be increased in order to raise the $1,000,000 for the public needs. If likewise a definite sum must be raised to pay the fire losses, this sum should be assessed upon property owners alike, that is, upon some definite valuation. It makes no particular difference whether it is a 100 per cent or an 80 per cent valuation, so long as each return his property on the same basis and has applied to each the same rate.

The present method of schedule-rating risks is one under which the hazards incident to each risk are analyzed with the purpose of securing from each his equitable contribution to the fire loss fund. Each owner of property under this system, when it is properly applied, is induced to improve his risk and thus reduce the fire loss. The rate must be derived from some assumed and definite value of the property, just as the tax rate cannot be determined without knowing the value of

the property from which the revenue is to be derived. The following illustration adapted from a report of the fire insurance investigating committee of New York shows why this coinsurance clause is necessary and how it works in actual practice. "There are statistics that show that on a certain class of buildings there are approximately the following losses for every $100 worth of property value:

On the average, out of every 100 fires:	
82 do a damage of less than $10 and on the average $2, making all together a loss of	$164.00
6 do a damage of less than $20 and more than $10 and on the average $14, making all together a loss of	84.00
3 do a damage of less than $30 and more than $20 and on the average $25, making all together a loss of	75.00
2 do a damage of less than $40 and more than $30 and on the average $35, making all together a loss of	70.00
1 does a damage of less than $60 and more than $50 and on the average $55, making all together a loss of	55.00
1 does a damage of less than $70 and more than $60 and on the average $65, making all together a loss of	65.00
1 does a damage of less than $80 and more than $70 and on the average $75, making all together a loss of	75.00
1 does a damage of less than $90 and more than $80 and on the average $85, making all together a loss of	85.00
2 do a damage of less than $100 and more than $90 and on the average $99, making all together a loss of	198.00
100 Total	$916.00

"That is, every 100 fires burn all together $916 worth of property, supposing the property in each case to have had a value of $100. Now if on each of these houses just $10 of insurance had been carried for every $100 of value, the losses to the companies would have been as follows:

82 losses of $2 each, making all together	$164.00
18 losses of $10 each, making all together	180.00
100 Total	$344.00

"It is obvious that on the eighteen losses in which the damage was more than $10 only the face of the policy would be payable. If we assume that there is one fire out of every 100 houses at risk, 100 fires will represent 10,000 risks, and the premium that must be collected from each of these 10,000 risks to pay this loss of $344 will be $344/10,000 or 3.44 cents. This, it is understood, is the net premium without any loading for expense. Three and forty-four one hundredths cents is the actual premium, but the rate based on $100 is ten times this, or 34.4 cents; that is, $10 of insurance at the rate of 34.4 cents per $100 amounts to a premium of 3.44 cents.

Now in an exactly similar way the cost to the company of carrying $20 of insurance can be computed; there will be:

82 losses of $2, making all together		$164.00
6 losses of $14, making all together		84.00
12 losses of $20, making all together		240.00
100	Total	$488.00

"To pay this loss each of the 10,000 risks must be assessed $1488/10,000 or 4.88 cents. This is the premium for $20 of insurance, but the rate, on the basis of $100, is five times this or 24.4 cents; that is, $20 of insurance at a rate of 24.4 cents per $100 will amount to a premium of 4.88 cents.

"This same principle can be carried out for any given amount of insurance. Take just one more case: suppose the insurance to be $80. There will then be payable by the company:

82 losses of $2, making all together		$164.00
6 losses of $14, making all together		84.00
3 losses of $25, making all together		75.00
2 losses of $35, making all together		70.00
1 loss of $45, making all together.		45.00
1 loss of $65, making all together		65.00
1 loss of $75, making all together		75.00
3 losses of $80, making all together		240.00
100	Total	$873.00

"The sum that must be collected from each of the 10,000 risks will be $873/10,000 or 8.73 cents. This is the premium for $80 of insurance, but the rate on the basis of $100 will be $\frac{5}{4}$ of this or 10.91 cents; that is, $80 of insurance at a rate of 10.91 cents per $100 gives a premium of 8.73 cents.

"In the table below are presented the rates that will correspond to various percentages of insurance to value:

If the insurance is 10% of the value, the rate should be	$0.34
If the insurance is 20% of the value, the rate should be	.24
If the insurance is 30% of the value, the rate should be	.20
If the insurance is 40% of the value, the rate should be	.17
If the insurance is 50% of the value, the rate should be	.15
If the insurance is 60% of the value, the rate should be	.13
If the insurance is 70% of the value, the rate should be	.12
If the insurance is 80% of the value, the rate should be	.11
If the insurance is 90% of the value, the rate should be	.10
If the insurance is 100% of the value, the rate should be	.09

"This is not only a practical demonstration of the fact that the rate in fire insurance must depend upon the percentage of insurance carried, but if the figures upon which it is based were correct, it would be a determination of what the net rate should be. It is understood, however, that the particular figures here given are only in way of illustration; the principle that the rate falls as the ratio of insurance carried increases holds whatever

the figures that are used, even though large losses were relatively more frequent than small ones."

The principle that is here established is that the rate in fire insurance must equitably depend upon the percentage of insurance carried, and that, for example, a rate of ninety-three cents, which might be right if 80 per cent of insurance were carried, would be much too low if only 30 per cent were carried.

The Fire Rate and Life Rate Compared. — The situation is exactly the same as in life insurance, where the rate must equitably depend upon the age. A premium of $23 for a man 25 years old would be far too low for a man 65 years old. If insurance were sold to these two men at the same price, the effect would be that the young man would be helping to pay for the hazard of the older man and, still more to the point, that eventually young men would refuse to enter into such an unfair bargain and the company would be doing a business only with old men for whom confessedly the rate would be too low.

The principle is exactly the same in fire insurance. If a man who carries 80 per cent of insurance is charged the same rate as a man who carries only 30 per cent, the effect is that the man who carries 80 per cent will be helping to pay for the hazard of him who carries only 30 per cent, and still more to the point that the tendency would be, under this unfair arrangement, for men to refuse to insure for the larger amount. But that this "adverse selection" does not operate so strongly as in life insurance is due to two causes; first, that the principle is not so clearly seen as in life insurance, and, second, that full or nearly full insurance is in most

cases needed at any price; this is particularly so where the property is mortgaged, the condition of the mortgage requiring that the property be well covered by insurance. The situation then is this: equity to the policyholder demands that the rate should be adjusted to the percentage of insurance carried, and to a certain extent the result is, if this is not done, that insurers will carry less insurance than conditions demand.

Now it is impossible to base a rate upon the percentage of insurance to value, unless this percentage is known. But to know it, means to know the value of the property, and here we are brought up against the same difficulty that arises in the case of the valued policy, namely, that as a practiced matter, it is impossible for the company to ascertain values. In the consideration of the valued policy law we have already reached the conclusion that this work must devolve upon the insured for the reason that he, if anybody, is the one who knows the values; at any rate he ought to know.

That the responsibility belongs to the insured is recognized in an agreement known as the coinsurance clause, in which the insured warrants that he will maintain at least a certain specified ratio of insurance to value and, failing so to do, he shall be considered to be himself an insurer for the deficit.

That is, a failure to maintain the provisions of this warranty, instead of tending to invalidate the insurance, simply brings in the insured in a new rôle, namely, as insurer for the balance by which the actual insurance that he carries falls short of what he warranted to carry.

Or to state it differently, by the agreement the war-

ranty is automatically observed because at the instant that the insurance in companies falls short of the required amount the insured himself enters as a "coinsurer."

This, when understood, is reasonable, but its consequences are not easily seen. To understand its workings completely it is necessary to take some concrete cases.

Effects of the Coinsurance Clause. — In the following examples an 80 per cent coinsurance clause will be understood, that is, one in which the insured warrants that he will keep his property insured for at least 80 per cent of its value. Only cases will be considered in which the insured fails to live up to his agreement, as, of course, otherwise the settlements will be the same as though there were no such clause.

CASE I

Value	$100,000
Insurance	50,000
Loss	20,000

Here the agreement called for $80,000 of insurance; the policyholder is, therefore, a coinsurer for $30,000. The insurance therefore stands:

Companies	$50,000
Himself	30,000
Total	$80,000

On any loss therefore the companies contribute $\frac{5}{8}$ and he himself contributes $\frac{3}{8}$; on the loss of $20,000 therefore the contributions are:

Companies	$12,500
Himself	7,500

That is, in spite of the fact that he carries insurance of $50,000 he is able to collect only $12,500; the balance of the loss he is compelled to stand himself. This is true because his rate was based on the assumption that he would carry 80 per cent of insurance; in reality he carried only 50 per cent of insurance and so doing he should have paid a higher rate. The rate that he paid was not sufficient under these circumstances to buy complete indemnity, and the deficiency was measured by his own forced contribution of $7500.

CASE II

Value	$100,000
Insurance	50,000
Loss	80,000

Here the value and insurance are the same as in the previous case, the only difference being that the loss is larger, namely, as it happens, equal to the amount of insurance that he had agreed to carry.

Here, as before, as he is a coinsurer for $30,000, the company's contribution will be $\frac{5}{8}$ and his $\frac{3}{8}$. But $\frac{5}{8}$ of $80,000 is $50,000, the full face value of his policy; he therefore obtains from the company the full amount of his insurance, the $30,000 that he must himself contribute being only the amount by which his insurance falls short of the loss.

CASE III

Value	$100,000
Insurance	50,000
Loss	90,000

Here, as in the two previous cases, the contribution of the company will be $\frac{5}{8}$ and his own contribution $\frac{3}{8}$. But $\frac{3}{8}$ of $90,000 is $56,250. This is more than the face of the policy, and as the liability of the company ceases at $50,000 the policyholder must stand this loss of $6250 in addition to his own contribution as a coinsurer of $33,750; that is, all together, the $40,000 by which his loss exceeds his insurance.

The conclusions are these: the coinsurance clause is operative, in effect, only when the loss is less than that percentage of the value that is named in the agreement; on losses above this, for instance, total losses, the company is liable for the entire amount of the insurance. An interesting consequence of this may be mentioned. If the coinsurance clause had been in use to any large extent in San Francisco, the rates would have been correspondingly lower and the amount of insurance carried would have been higher, and yet the insured would have received the full amount of their insurance because the losses were all practically total.

The lowering of the rate has been referred to; the effect of the introduction of the coinsurance clause is, of course, so far as the liability of the company is concerned, to fix the ratio of insurance to value, so that it is possible and customary, upon this basis, to make the rate depend upon the percentage, as we have seen that in equity is due.

Usually 80 per cent is taken as the standard, the rate for 90 per cent and 100 per cent coinsurance being proportionately lower and the rate for percentages less than 80 being proportionately higher. In some places,

as in New York City, the insured is not free to choose what percentage of insurance he will carry; in that case, usually, as in New York City, 80 per cent or over is prescribed. In practice this is not so arbitrary and harsh as might seem to be the case; first, because most of the insured desire to carry at least 80 per cent of insurance, and second, because where, as in fireproof office buildings, the insured might very naturally desire to carry only partial insurance, as a matter of fact full insurance can be given at scarcely any additional cost.

Justification of Coinsurance. — The general conclusions we reach with regard to the coinsurance clause are these: that the principle upon which it is founded, namely, that rates should be based upon the percentage of the insurance carried, is not only sound, but is absolutely requisite if the equities of the insured are to be preserved; second, that the coinsurance clause rightly recognizes that as a practical matter the responsibility for maintaining a given percentage of insurance must rest with the insured; third, that the operation of the agreement is automatic and fair.

In addition to the theoretical justification of such a clause there are also large practical considerations which justify its use. Its absence is probably responsible for the existence of the most objectionable forms of discrimination. We have seen that in non-protected areas there is a tendency to purchase full and in some cases overinsurance.

In protected districts there is a tendency to underinsurance, since most of the losses are partial and the

"spread" of the insurance is very great; that is, a small amount of insurance gives a large amount of protection. This is especially important in the case of large property values. The property is often composed of different units, each with good construction and protection. The owners of these large properties are able to secure the blanket policy, the face amount of which is but a small percentage of the total value of the property insured. Where the coinsurance clause is prohibited by law, such owner often secured adequate protection on his diverse property by a small amount of insurance. The small property owner was not only at a disadvantage in bargaining, but was compelled by the very character of his property to purchase a large amount of insurance.

Paradoxical as it appears, much of the opposition to the principle of coinsurance has come from small property holders, and by this opposition they have furthered the interests of the large property owner. The property of the small owner is all subjected to a fire, while that of a large owner is not. This coinsurance clause was not applied to many classes of risks such as dwellings and public property. Its chief application was to mercantile and manufacturing risks. This clause has long been in use in marine insurance although the arguments for its application in this kind of insurance are not as strong as in the case of fire insurance. It is also generally used in the European countries, and in many of them it is required by law. Any system of state fire insurance would need to apply it for the same reasons that in levying proportional taxes an effort

is made to secure equity by taxing the property of each at some uniform valuation.

Insurable Interest. — The subject of Insurable Interest is indirectly related to liability in that the establishment of this relationship to the insured by a third party affects the liability of the company to pay sums to persons other than the insured. Clause (*l*) recognizes this situation when it provides for the recognition of the interests of a mortgagee or other creditor of the insured. The condition of insurable interests may arise in any one of various ways. Whenever any one has an interest of a monetary value in the insured property, secured by a mortgage or established otherwise, which creates a creditor relationship, he has the right to insure the property to the extent of this value. The courts have been disposed to apply the principle of insurable interest very widely. Consignors of goods in the goods shipped, contractors in building under construction, carriers in goods transported, commission merchants in goods held for sale, lessee in property leased, partner in the property of the partnership are but a few illustrations of the many circumstances which create an insurable interest.

The Mortgage and Insurable Interest. — One of the most common cases in which an insurable interest arises is in connection with a mortgage. The policy contains clauses which attempt to determine the relationship among the mortgagor, the mortgagee, and the insurer. The courts in general have been inclined to interpret and apply the policy and these clauses in a manner to protect and serve the interests of the holder of

the mortgage. Clause (*l*) of the standard policy recites that " If an interest under the policy exists in favor of a mortgagee, the conditions hereinbefore contained shall apply in the manner expressed in such provisions, and conditions of insurance relating to such interests as shall be written upon, attached or appended thereto." In the decisions of the courts, it was early established that both the mortgagor and mortgagee might insure their interests in the property. But the situation might arise where the mortgagee might secure from the insurer the value of his mortgage interests in the property and also collect the debt secured by the mortgage from the owner of the property. This would make it possible for him to secure a profit from the existence of insurance, and the policy contract should be one of indemnity. Provision had to be made in the mortgage clause to prevent this result. This was done by providing that the insurer upon paying to the mortgagee the loss which represented his interest in the property then becomes subrogated to the mortgage. That is, the insurance company became in effect possessed of the mortgage and was entitled to recover from the mortgagor. If, however, the sum paid by the insurer to the mortgagee was less than the face of the mortgage, the holder of the mortgage could collect the remainder of his debt. Permitting both the mortgagor and mortgagee to insure the same property led to confusion, and efforts were made to devise a mortgage clause in which the interests of both were joined. The following clause is a common one used as the Standard Mortgage Clause, but without the contribution feature.

The Mortgage Clause. — "The interest of the mortgagee shall not be invalidated by any act or neglect of the mortgagor or owner nor by foreclosure or other proceedings nor by change in the title or ownership nor by occupation of the premises for purposes more hazardous than are permitted by the policy, and provided that in case the mortgagor or owner shall neglect to pay the premium the mortgagee on demand shall pay the same; provided, also, that any change of ownership, occupancy, or increase of hazard coming to the knowledge of the mortgagee, trustee, etc., shall be notified to the company and unless permitted by the policy it shall be noted thereon and the mortgagee on demand shall pay the premium for such increased hazard for the term of the use thereof."

The Contribution and Mortgage Clause. — The Contribution Clause with its mortgage rider, in respect to which this clause must be applied, is as follows in the Standard New York Policy. "This company shall not be liable under this policy for greater proportion of any loss on the described property . . . than the amount hereby insured shall bear to the whole insurance, whether valid or not, or by solvent or insolvent insurance, covering such property, and the extent of the application of the insured under this policy or of the contribution to be made by this company in case of loss, may be provided for by agreement or condition written hereon or attached or appended hereto." The mortgage rider has the following language: "In case of any other insurance upon the within-described property this company shall not be liable under this policy for a greater

proportion of any loss or damage sustained than the sum hereby insured bears to the whole amount of insurance on said property, issued to or held by any party or parties having an insurable interest therein whether as owner, mortgagee, or otherwise."

As an example of the not infrequent difference of opinion among the different courts in interpreting the insurance contract, the application of this Contribution Clause affords an excellent illustration. In the case of the Hartford Insurance Company *v.* Williams (Fed. Rep. Vol. 63, No. 925) the court said, in an appeal from the lower court, which had held that the Contribution Clause was not effective and the Insurance Company could recover, " we can conceive of no other object that the parties could have had in using the words ' issued to or held by any party or parties having insurable interest therein ' unless it was to avoid the very construction of the Clause which the Circuit Court appears to have adopted. As before remarked, the concluding words of the paragraphs seem to have been added out of abundant caution that there might be no ground upon which to insist that the right to pro-rate was limited to policies held by the mortgagee or for his benefit. . . . In construing a contract like the one now in hand it is our duty to look to all the provisions of the agreement and to give effect to what seems to have been the obvious intent and meaning of the parties. We would not be justified in ignoring an agreement in one part of the instrument which is as purely expressed as language could well express it merely because it limits to some extent a scope of general language employed in another part of the instrument."

Effects of the Mortgage Clause. — The important provisions and relations established by these mortgage clauses are: first, the mortgagor is the one who takes out the policy, and when a mortgage on the property is given, the insurer is notified and gives his consent. Second, the insurer provides that the mortgagee's interests shall be protected in various ways; as, for example, by freeing him from the effects of acts of neglect by the mortgagor and notification to the mortgagee of a proposed cancellation. Third, the mortgagee agrees to pay premiums which the mortgagor neglects or refuses to pay, or to pay any extra charge for an increase in the hazard of the risk and further to inform the insurer of any change in hazard or interests in the property of which he may have knowledge. If, however, the mortgagee has knowledge at the time the insurance was effected or at the time the mortgage clause and rider was attached, that acts or facts existed which invalidated the policy, he has no right of recovery against the company. The courts, however, are disposed to protect the interests of the mortgagee in every possible manner, since it is the mortgagor who has both control and possession of the property which is the security for the loan.

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CHAPTER X

FINANCES OF FIRE INSURANCE

The Premium. — The premium is the sum paid by the insured to the insurer for the indemnity promised by the contract in the event of a loss. It is the chief source of income for the company. Interest is earned on these invested premiums and also on whatever capital has been contributed by the shareholders. From these payments and their interest accumulations fire losses, expenses of transacting the business, and taxes must be paid. Whatever remains constitutes an income or dividend to the shareholders on their investment.

Premium in Fire and Life Insurance. — The premium in fire insurance differs in several respects from the premium in life insurance. Every policy in life insurance matures in some form; that is, the principal sum named in the policy must be paid by the insurer, either as a death claim or a matured endowment. The only apparent exception is when a term policy is issued under which a certain proportion of the policyholders secure during the term of years insurance protection without the policy maturing by death. The fire insurance policy resembles most closely this kind of a life insurance policy, since of all those who purchase policies, some will be paid the face of the policy or such part of

it as represents the loss suffered, while others will have no loss but will secure the protection during the existence of the policy. It is the protection which is of primary significance in the fire insurance contract, because no property owner should purchase a policy because he expects to suffer a loss. The premium is paid to secure this protection and not with the intention of making a profit from the happening of an unforeseen event.

Protection in fire insurance is to be distinguished both from prevention and profit. The mere fact of having a fire insurance policy does not manifestly assure the owner that his property will not burn, nor on the other hand should the possession of the policy secure for him a profit in the event of a fire; that is, a sum in excess of the value of the property destroyed. The protection consists simply in the fact that in the event of a loss he will be indemnified.

In life insurance the premium is adjusted to the age and physical condition of the insured, but in fire insurance no necessary relation exists between the amount of the premium and the age of the building, for the fire risk does not increase directly with age. Death is a certainty for all members of the insured group, and the length of life is, for the group, predetermined. But destruction is not a certainty for all the buildings nor is there a definite length of life for them.

It is only in a broad sense that the " physical condition of the building " and its surroundings is important in determining the premium in fire insurance. Other factors affecting the premium, such as the laws applying

to insurance, taxes, climatic conditions, and moral hazards have been discussed. It is often argued that in fire insurance there is a rate or premium for each risk, while in life insurance there is a rate or premium for each class of risks, based upon the age of the group. This is true only as a general statement. It has been shown that in the age groups the premium is sometimes adjusted according to the increased hazard of the insured life. In fire insurance, the system of schedule rating attempts to analyze the hazard of the risk and determines thereby the premium which should be charged. But schedule rating is not applied to all risks. The advocates of classification as a basis for rate making in fire insurance attempt to apply the same principles as are used in life insurance. These alone cannot be used to determine fair and equitable premiums.

The Premium as a Tax. — The premium in fire insurance is often considered as a tax on the ground that it is simply the compulsory payment which must be made by the insured group to meet the losses by fire. This "tax" is assessed by the companies; that is, the insurer simply acts as a collecting and distributing agent. There is much similarity between the fire insurance premium and an ordinary tax, but the comparison should not be pushed too far. Fire insurance, in so far as it is conducted by stock companies, is a business, the investors in which expect to derive a profit or a return from their invested capital through the collection of the premiums. The government collects a tax with the expectation of returning all of it to the public indiscriminately whether to contributors or to non-

contributors. There is no idea of profit; no capital has been risked as in the case of the stockholders in fire insurance companies. The tax is in theory levied upon all property holders and income receivers. The premium is levied only upon those who choose to become members of the insured group. The premium is not directly apportioned to the amount of property held as is the tax, but somewhat according to the condition of the property; that is, in respect to the hazard of the risk.

The premium in fire insurance as in life insurance is paid in advance; that is, it is paid at the time of making the contract which marks the beginning of the protection. It is not, therefore, strictly considered, paid in advance except that future protection is purchased by a certain amount of the present paid premium. The premium is paid for policies, running from one to five years, and provision is made for short-term rates; that is, for protection covering a period less than a year. This becomes important either when temporary protection is desired or when policies are canceled, either by the insurer or the insured, before the end of the period for which they were granted. The premium is based on one hundred dollars' worth of insurance. In general the rate is lower for the longer term contract; that is, a rate of seventy-five cents per hundred for a one-year policy may become a sixty cent rate for a three-year policy. The following table shows the amount of premium received and the average rate by the joint stock fire insurance companies as reported to the Insurance Department of New York for 1914.

Term of Contract	Amount of Premium	Rate per $100
One year or less	$185,750,562	$1.0903
Two years	4,177,429	.8572
Three years	247,653,174	.9156
Four years	3,720,538	.9828
Five years	129,385,863	1.1697
Combined term	384,937,004	.9877
Total business	$56,012,859,329	$1.0189

The Reserve. — The method of paying premiums accounts for the existence of the reserve in fire insurance. There is some difference of opinion as to the exact character and purpose of this fund. It is called both the reinsurance reserve and the unearned premium income. Some argue that it is simply that fund which would be sufficient to pay the fire losses on policies in force; others maintain that it is that fund which would induce another company to assume the contracts in force. Before discussing the implications which would result from the different theories as to the nature of this fund, let us notice more particularly its origin. Since the policies run from one to five years and since the premium is paid in advance, it is evident that the company holds certain funds for which it has not at the particular time given any protection. That is, at the close of any day in any year it has earned one three hundred and sixty-fifth of the premium, or at the close of a month one twelfth of the premium on a one-year policy. It might be argued with some reason that in strict insurance theory this method of determining the

amount earned is not correct because the risk is assumed for a definite period and the cost of assuming such risk is based upon the occurrence of fire over a period of years. That is, the specific premium is paid not only for the immediate protection granted, but also for the assumption of a risk in future time, and no equating of this charge over a short period can be made since short-period fluctuations are very unequal. If all premiums were paid on the basis of daily or even monthly protection, the total premium charged would undoubtedly be greater than it now is, since the risk for the insurer would be greater. However, for practical reasons, such as determining the solvency of companies, their sale to other insurers, or their taxation, some method must be devised for calculating this reserve.

Unearned Premium. — It is undoubtedly true that a part of this paid premium is unearned; that is, it is held by the company in trust for policyholders. It is in part at least a liability for the company, since claims may arise from the policyholder either through losses by fire or through a demand for a cancellation of the policy. A part of this fund which is held may become, at the close of the period for which the policies were granted, the property of the company. The protection has been given, and any excess in the premiums together with their earnings properly constitute the profits from the business for the shareholders who have risked their capital in the event the premiums are not sufficient to meet the accrued losses. If the company has held in this reserve such funds as will pay the holders of policies their share of the unearned premium on unexpired risks,

it is relieved of liability, assuming of course that loss payments have been regularly paid.

How much, if any, of the assets held in the business on account of the existence of this reserve will ultimately be released and made available for distribution in the form of dividends to stockholders or otherwise depends upon the care with which the company selects risks at the particular rate of premium. Experience shows that the losses on policies are greater in the early term of the policies. This is chiefly due to the greater prevalence of moral hazard and incomplete data as to the physical aspects of the hazard; whereas the older the risk, the less the percentage of loss, since the rate becomes normally a more accurate expression of the hazard assumed. The percentage of loss therefore on this unearned premium is greater in the earlier than in the later period of the policy.

It is impossible to determine whether the unearned premium, held on a particular risk or even a class of risks, is at a particular date adequate or inadequate, for this would assume a knowledge of the exact correctness of the particular rate or premium. Whether it is or is not, depends primarily on what the future losses will be. The premium is retrospective in its determination; that is, it is a price established for a thing the cost of production of which cannot be previously known. Indemnity is in the future, but its price in the form of a premium must be fixed at the time of the sale. This is done, as has been described, by analyzing so far as is possible the hazard of each risk in respect to past experience and other factors. Notwithstanding the impossibility of deter-

mining the specific adequacy of any particular premium, there is a certain amount of it which has not been earned, and some method of arriving at the unearned portion of the premium is necessary if any test of solvency is to be applied to the company.

How the Unearned Premium is Determined. — The general method is one by which there is an equation of dates or periods of time. An annual policy written on January the first has on December the thirty-first only one day to run, while one written on the latter date has three hundred and sixty-four days to run. These two assumed policies may be considered as equating each other with six months as their average length of time to run. This simple hypothesis is applied to all the policies for the year. This assumes that the company has written business throughout the year and in equal amounts during each of the one-half year periods or on the basis of each month. Since policies are written for terms longer than one year, provision must be made for determining the reserve on two, three, and five year policies. This is done by applying the preceding principle to all the longer term policies in the form of the rule that the reinsurance reserve or unearned premium for unexpired risks is to be determined by taking fifty per cent of the premium received on all unexpired risks having less than a year to run and a pro rata on all risks which have more than one year to run.

Reinsurance Reserve. — Before illustrating the actual operation of this principle, an explanation of the term "reinsurance reserve" is necessary. It is often used synonymously with "unearned premium fund." But

these two funds are not necessarily the same. A company which decided to reinsure its risks might well be able to do so for a sum less than its unearned premium fund. On the other hand if its risks have been carelessly selected, it may not be able to reinsure its business in another company for the amount held in this unearned premium fund. A fire insurance company does not begin business with the expectation of reinsuring its risks. It does not need to collect a fund for this purpose. The state in supervising the fire insurance business of companies is not primarily interested in compelling them to collect a fund for reinsurance. Regulation of assets and their periodic valuation is for the purpose of determining whether funds are held in sufficient amount to meet the obligations in the contracts. The reserve is required to be maintained not for purposes of reinsuring the business, but for meeting maturing policy claims. The true reserve therefore in fire insurance is, as in life insurance, a liability of the company during the existence of the policies from whose advance premiums it has been set aside. The following tables illustrate how the rule for its calculation is applied to the different length of policies.

Term for Which Written	Premium	Am't. Earned at End of Year
1 year	$1,000,000	$500,000
2 years	2,000,000	500,000
3 years	3,000,000	500,000
4 years	4,000,000	500,000
5 years	5,000,000	500,000

Since on a one-year policy fifty per cent of the premium is assumed to be earned and fifty per cent unearned, the $1,000,000 premium receipt divides itself under this rule into two equal amounts. The $500,000 unearned or the reserve for that year on these policies becomes earned in the following year. On the policies which run for three years the pro rated part earned at the close of the first year is $500,000; that is, one sixth of it is earned, since in three years there are thirty-six months and the six month or fifty per cent part determined for one-year policies is one sixth of the thirty-six months. Likewise on the five-year policies the amount of the $5,000,000 premium receipt which has been earned is $500,000, since in five years there are sixty months and six months is one tenth of the sixty months. It will be understood in using the ratio of six months to the total number of months in the term of the policies, that this is only applying an easy method of calculating the unearned premium by expressing the fifty per cent rule in terms of months.

The further application of this principle of determining the unearned premium or reserve may be illustrated in the following manner. Assume that a company has been in business three years, having written one-year, three-year, and five-year risks. What would be the unearned premium fund at the close of each year and the total amount at the close of the three-year period of business?

BUSINESS OF 1912

TERM OF POLICY	AMOUNT OF PREMIUM	EARNED PREMIUM
1 year	$100,000	($\frac{1}{2}$) $50,000
3 year	120,000	($\frac{1}{6}$) 20,000
5 year	200,000	($\frac{1}{10}$) 20,000
	$420,000	$90,000

BUSINESS OF 1913

1 year	$100,000	$50,000
3 year	120,000	20,000
5 year	200,000	20,000
	$420,000	$90,000
Adding earned premiums on business of 1912:		
On 1-year policies $\frac{1}{2}$ or		$50,000
On 3-year policies $\frac{2}{6}$ or		40,000
On 5-year policies $\frac{2}{10}$ or		40,000
		$130,000
		90,000
Total earned premium		$220,000

BUSINESS OF 1914

1 year	$100,000	$50,000
3 year	120,000	20,000
5 year	200,000	20,000
		$90,000
Adding earned premiums on business of 1912:		
On 1-year policies		
On 3-year policies		($\frac{2}{6}$) $40,000
On 5-year policies		($\frac{2}{10}$) 40,000
Adding earned premiums on business of 1913:		
On 1-year policies		($\frac{6}{12}$) $50,000
On 3-year policies		($\frac{2}{6}$) 40,000
On 5-year policies		($\frac{2}{10}$) 40,000
Total premium earned		$300,000

It will be observed that at the close of the first year the company has earned only $90,000 of the total premium which it has received, the remainder, $330,000, being set aside as a reserve for the liability incurred under the policy contracts. In the second year the company likewise earns only $90,000 of the business written during the year, but it has earned $130,000 of the premiums received on the business of the preceding year, which makes a total of $220,000 earned premiums of a total premium receipt during the two years of $840,000. It will be understood that in the second year it earns all the premium on the one-year business of the first year and will therefore be freed from any further obligation to maintain a reserve on that business. Likewise in the fourth year it will have earned all the premium on the three-year business of the first year; and in the sixth year all the premium on the five-year business of the first year will have been earned. It must not be assumed from these illustrations that the company in actual operation sets aside this particular part of every year's premium receipt and holds it to pay the specific losses in these policies. From the total fund held by insurance companies, claims are continually paid without respect to the specific sources of these funds.

Significance of Companies' Reserves. — This method of averaging the reserves is of value in determining the solvency of companies, but it should not be used to compare the excellence of companies. Many other facts should be taken into consideration for this purpose. The expenses and the losses incurred, the interest obtained on the unearned premium, the surplus, the capital,

and many other factors are important when comparing companies. These reserves, as calculated by the statutory requirements, become a part of the general fund of the insurance company. Interest on invested funds is a part of it. From this general fund not only are claims paid, but also expenses, taxes, and profits or dividends. The true purpose of the reserve is to guarantee the ability of the company to meet its policy obligations.

Disadvantages to New Companies of This Method. — This method of calculating the reserve may quite differently affect old and new companies. It will be recognized that under this system a relatively large amount of the premium is compelled to be held in the early years of the company in this reserve; that is, a new company will find a large proportion of its income not available for paying expenses and losses. A new company is likely to emphasize annual business. This business is often not as good as the term business of three and five years which becomes settled; that is, its rate is likely to be a truer expression of the hazard, and the expense of its acquisition is not so great. The new company is likely to be at a disadvantage in securing business because it is new. The old company has from past business accumulated a reserve and probably a surplus. It, as well as the new company, must set aside this high reserve, but as compared with the new company it has old policies continually expiring, thus setting free funds held as unearned premiums. A new company may receive $500,000 in premiums on its business. Assume it is one-year business. It must set aside $250,000 of this as a reserve. Commissions will average

twenty per cent and other expenses probably twenty per cent. These will amount to $200,000. The fire loss will be probably fifty per cent which will amount to $250,000. If all these items are added, the total is $700,000, which is $200,000 in excess of the premium receipt. This is an apparent loss. But as a matter of fact only $450,000 has been paid out; that is, $200,000 for expenses and $250,000 for losses.

This statutory method of calculating reserves is in part a result of the existence of the conflagration hazard, since its prevalence, as well as the normally fluctuating experience of companies, does not produce the assumed loss ratio of fifty per cent for each company. There is, however, no doubt that the prevalent method of determining the reserve places a very great handicap upon the organization of successful fire insurance companies. The greater number of such companies, as will be shown later, have been forced to reinsure their business or fail. These companies are not only under disadvantage in securing a good class of business which would tend to make them successful, but they are forced to set aside a large part of their income. This is not available for expenses in developing the business or for paying ordinary current losses, for the latter of which it is not needed. It is not probable under present conditions that a large number of successful fire insurance companies will be formed. This need not be considered a disadvantage, provided there is sufficient indemnity for sale. It is not a situation in which the stronger the competition and the greater the number of competing units, the greater the public benefit.

The situation as determined by these conditions and legal requirements is, however, one which should be known to the public, both for the purpose of protecting innocent investors in the frequently organized new stock fire insurance companies, and also that modifications in the requirements or other means may be taken to secure protection when there is a dearth of indemnity. As the situation now stands the chances against the formation of a large successful stock fire insurance company are very great, if they are not indeed prohibitive.

The Surplus. — The surplus in fire insurance has greater significance than in life insurance. In fire insurance it is that amount set aside exclusive of the required reserve which is held by the company as an additional guarantee to policyholders. It is, however, the property of the company; that is, it is a proprietorship liability. Its origin is from the profits of the business. It may be used for any one of several purposes. Excessive losses, due to a conflagration or unfortunate experience on certain classes of business or in certain sections, may be paid in part from it. Dividends may be paid from it during the unprofitable years on the business. It is the practice of all strong stock companies to accumulate a surplus. Its existence may prevent an assessment on the stockholders at times of heavy losses. In many companies the surplus exceeds the capital stock. In life insurance there is little reason to accumulate a large surplus since the loss ratio is very regular. Its chief use is to protect the life company against fluctuations in their interest earnings and not in their mor-

tality experience. Dividends in the stock life insurance companies may also be equalized by the existence of a surplus. But fire insurance companies are subjected not only to fluctuations in their earnings on invested funds, but, what is more important, the burning ratio over a series of years shows no such regularity as does the death rate. A conflagration never occurs either without causing a number of companies to fail or placing a great strain on many of them. The surplus serves as a bumper to receive the shock of the heavy losses. Some companies accumulate a special conflagration surplus. The contingencies are therefore more numerous and serious in fire insurance than in life insurance. Hence the accumulation of a surplus by the latter companies. The amount to be accumulated and the specific additions to the fund from year to year are matters of judgment for the officials of the company, as determined by the character of the business and its profitableness. It is not primarily a source for the extension of the business, since not infrequently stock insurance companies increase their capital stock by the sale of new shares of stock. It is in the nature of a safety fund which serves to guarantee the successful continuance of the company to the shareholders and also to give added protection to the policyholder.

State Regulation of Investments. — The investments of fire insurance companies are regulated by the state in somewhat the same manner as those of life insurance companies. The state often prescribes the kind of securities which may be held and makes a valuation

of the fire insurance companies' assets. But investments in fire insurance companies differ from those in life companies in several respects. In the first place, interest accumulations do not influence the rates in fire insurance as in life insurance. The life insurance contract is made for a long period of years, and the amount of the premium is a resultant of the mortality rate and the interest which can be earned. That is, the assumed interest rate is as important in life insurance calculations as the mortality rate. But in fire insurance the policies run only for a limited number of years and the amount of the premium is based upon the hazard of the risk or the probability of the company being forced to pay the claim under the policy. The interest earning, therefore, plays but a small part in determining the premium rate. A large amount of quickly available funds must be held by the fire insurance company to pay the current and uncertain losses. It therefore has large cash assets, large amounts deposited in banks, and in quickly realizable investments, such as stocks. That is, the assets of a fire insurance company are more liquid than those of a life company. They resemble more those of a bank. The interest earnings in fire insurance are of more significance to the shareholders than to the policyholders.

Character of Investments. — Notwithstanding this necessity to have on hand a large amount of funds in cash or quickly convertible investments to meet the fluctuating liabilities of the fire insurance company, there remains a certain amount of their assets which can be invested in long-time securities, such as bonds

and mortgage loans. There has been a marked tendency in later years for fire insurance companies to confine their investments to stocks and bonds. Mortgage loans might bring a higher interest return, but they cannot so easily be converted into cash. The following table shows the character of the assets of five of the oldest and largest stock fire insurance companies.

Company	Real Estate	Bonds & Stocks	Mortgage Loans	Cash	Agent's Balances	Int. & Rent	Other Assets
X	410,000	18,939,550		1.975818	1.968523	102,972	3,664
Y	2,450,000	16,840,402	35,500	1.223746	1.645759	145,752	46,019
Z	728,000	21,237,343	394,500	1.521667	2.765076	265,767	39,816
W		30,724,755	5,500	2.161180	2.857846	250,635	
R	141,013	13,693,236	164,880	.792295	1.007264	109,068	10,000

Disbursements of Insurance Companies. — The disbursements of fire insurance companies are in the form of loss payments, expenses, commissions, taxes and other operating charges, and finally dividends or profits. Excluding the subject of rates, much of the discussion about fire insurance has centered on the subject of expenses and profits. It is argued by many that both expenses and profits are too high and that this is the primary cause of high rates for fire insurance. The following table shows the relation between income and the different items of the disbursements in respect to the one hundred and ninety-one joint stock fire insurance companies reporting to the state of New York for the year 1914.

Gross premium charged	$502,808,576
Net premium earned	318,348,924
Net premium written	333,647,016
Net losses paid	192,098,565
Net losses incurred	200,720,782
Net expenses (excluding losses paid, dividends, taxes, remittance to home office, loss on sales or maturity of ledger assets, decrease in book value)	135,823,422
Per cent of net losses incurred to net premiums earned	63.05
Per cent of net losses incurred to net premiums written	60.16
Per cent of net expenses to net premiums earned	42.66
Per cent of net expenses to net premiums written	40.71

The Expense Element. — In analyzing this table, attention may first be directed to the expense item. The expense of fire insurance companies has some important characteristics. In the first place, the expense is an outlay for a service or product the total cost of which cannot be known at the time of the sale. In the production of most commodities, the total expense of their production is fairly definitely known in advance and the price at which the product is sold usually covers at least this total expense. But in fire insurance the seller of the indemnity does not know at the time of the sale what it will ultimately cost him to supply this indemnity. A company may, for example on a group of three-year policies, pay in losses during the first year of the policies all the premium received. In the second place fire insurance is conducted as a retail business, and it is therefore subjected to all the numerous expenses of a middleman business. From the local agent to the general agent, to the department and finally to the home office is often a long road with many toll-takers. In the third place, the business in its cost aspects is affected by so many fluctuating factors that

the past often serves as an unreliable guide for the future. In the fourth place the expense of production is brought to the attention of the consumer — the insured — in a very direct manner because insurance is itself a finished product. It has no intermediate stages of production, and all costs of production are centralized in the transaction of its purchase. An expense item of thirty to fifty per cent in the price seems to the buyer of insurance a large item. If the consumer would analyze the items in the price paid for the ordinary article in the market, he would often find an equally high or higher percentage added to the original producer's price. From grower to consumer represents many stages in the production of many articles, an addition having been made at each stage in the process of the goods' ripening for use. But in insurance there are no stages in production. The total costs are unified in the one act of production and sale.

Classification of Expense. — The expenses in fire insurance are of two general classes. The fixed expenses, which include such items as salaries, rents, supplies, and inspection rating. The remaining expenses are of a somewhat variable character. These include such items as commissions and taxes. The fixed expenses considered as a ratio to business transacted do not directly increase with an increase of the amount of business; that is, their character makes the business of fire insurance subject in a general way to the principle of increasing returns. But in an effort to secure these potential economies of large scale business, a counteracting effect is often produced in the actual conduct of the business by an increase in the other expenses.

That is, the most direct manner by which a company can secure more business is to offer inducements to agents in the form of higher commissions. This procedure encourages reckless competition among companies, which often means the acceptance of poor risks or risks at too low rates. This in turn increases the loss ratio. No other one fact shows so clearly the evils of competition of this character in the fire insurance business from which the public is ultimately the sufferer. Competition in service and finally in price should be encouraged, but the competition upon which the public has too often insisted has been in rate-making and in other aspects of the business from which there can be no possible public gain. The following table, adapted from the 1912 Report of the National Board of Fire Underwriters, shows the changes in the expense ratios.

It will be observed from this table that there has been a marked increase both in expenses and commissions during the period. This condition during the past few years has not changed. But the ratio of fixed expenses has increased from 31.06 per cent to 39.75 per cent, that is, 8.69 per cent; while commissions have increased from 11.32 per cent to 22.05 per cent or 10.73 per cent. That is, commissions have almost doubled during the period, whereas other expenses have increased about 26 per cent. The former expenses represent in a sense the operating side of the business, and the latter — commissions — the commercial. The public is interested in both kinds of expenses, and it may be inquired to what extent the price of insurance can be favorably affected by a reduction in these expenses.

UNITED STATES AND FOREIGN COMPANIES

Year	Number of Companies	Ratio of Losses to $100 Premiums	Ratio of Premium Charged on Each $100 of Risks	Ratio of Expense to $100 of Premiums	Ratio of Commission to $100 of Premiums
1860–1870	146	58.02		31.06	11.32
1871–1880	177	58.60	.9432	33.16	14.89
1881–1890	152	58.97	.9880	35.16	17.95
1891–1900	140	60.04	1.0313	36.69	19.25
1901	146	59.10	1.0605	37.45	20.76
1902	145	52.48	1.1518	35.73	20.28
1903	147	48.61	1.1874	36.89	21.31
1904	144	61.78	1.1613	36.93	21.22
1905	158	47.89	1.1679	36.92	21.45
1906	156	96.80	1.1469	38.85	21.45
1907	169	46.42	1.1697	38.16	21.22
1908	162	54.84	1.1444	39.24	21.89
1909	163	48.12	1.1223	38.50	21.50
1910	175	49.74	1.0822	39.16	21.61
1911	180	53.93	1.0594	39.75	22.05
1860–1911		57.85	1.0635	36.42	19.11

How Expense can be Reduced. — It must be recognized that there are only four ways open to the public to reduce the cost of fire insurance. First, by a reduction of the fire loss. This subject is discussed in a later chapter. Second, by a reduction in fixed expenses. Third, by a reduction in commissions. Fourth, by a reduction in the taxes. The decrease in fixed expense is capable of most marked reduction by permitting or requiring the companies to coöperate in inspection, rate-making, and other activities connected with the writing of the risk and the settlement of the loss. This necessitates adequate supervision by the state in order to pre-

serve justice and equity in rates. But no amount of competition in inspecting and rating risks will favorably affect the price of insurance. In the case of commissions, coöperation by companies under the supervision of the state would also probably affect the amount paid in commissions. This is not to argue that fire insurance agents as a class are paid wages higher than those for equally efficient laborers in other industries. But in the actual conduct of the business, the wage paid to agents as a commission often serves to increase the price of the insurance, both because it encourages discrimination and rate cutting, as well as the bringing into the business undesirable classes of agents who render no service commensurate with the payment received. Uniform commissions to properly qualified and operating agents would bring into fire insurance a much desired stable element in the expense and would reflect itself both in a more equitably distributed and in a lower cost.

The Tax Element in Expense. — The fourth source of reducing the expense of fire insurance companies — taxes — does not seem to offer much promise. The taxes vary from state to state, not only as to the general rate levied by the state government but also in respect to the extent that local governments levy charges and licenses upon the business. In 1914 the one hundred and ninety-one stock fire insurance companies of the state of New York paid exclusive of real estate taxes $9,120,508, in taxes. This was 2.73 per cent of the net premiums written, or 6.46 per cent of the net premiums earned less losses incurred. These taxes are levied for the support of the insurance departments, for fire depart-

ments, provisions for firemen, and for other specific purposes. In all states they constitute a considerable source of revenue. Since in no state is all the property insured, the fire insurance tax in its practical operation becomes a tax on insured property. It thus lacks universality, and since it differs from state to state and since sometimes local governments levy charges, it also lacks uniformity both among the states and within a state. Since it is a tax usually levied on premium receipts or on reserves, it is shifted from the company to the policyholder. It has been shown that the reserve in fire insurance as in life insurance is essentially a liability from the view-point of the company, and hence a tax upon it is not one upon earned income. It is similar to the tax on a property for its full value to the owner when a mortgage has been given for one half the value of the property. The chief argument for the tax is its practicability. It is easy and inexpensive to collect, and being a very indirect tax, no large amount of objection is made to it by the public. If the proceeds of the tax could be used for the expenses of maintaining insurance departments, fire departments, and other activities directly benefiting property owners, it would have some justification on the basis of the fee theory of a public revenue. But even under these circumstances the property not insured and those not owning property would also derive benefits. If the tax was so devised as to make the profits alone a direct source of revenue to the state treasury, as contrasted with that amount collected for the supervision work of insurance and fire departments, no especial objection could be made, inas-

much as the fire insurance business is a private business in which capitalists invest, as in other such business, with the expectation of receiving a profit. In this respect it would seem that a tax is as justifiable on the profits of insurance as upon the profits of any other business. What is most needed in fire insurance taxation is greater uniformity. With the varying rates from state to state, property owners in one state are compelled to pay the tax levied in another state. There is, however, an increasing tendency to add the tax, especially the local government tax, to the regular rate, as determined by the hazard of the risk. A program of insurance taxation which would redound to the benefit of the public and at the same time meet the demands of most insurance companies would be as follows:

First. An equitable system of uniform taxation.

Second. A repeal of all laws, which authorize counties and municipal corporations to tax premium incomes as an item of local property.

Third. A repeal of all laws which authorize local governments to levy occupation or license taxes.

Fourth. A tax on net premium receipts by the state, sufficient to support the insurance department.

If reference is made to the tables on pages 228 and 231, it will be observed that the expenses of fire insurance companies are about thirty-eight cents out of every dollar received. Of this thirty-eight cents, about twenty-one cents are for commissions and 2.73 cents for taxes. The losses require about fifty-seven cents of this dollar. There remains five cents for profit. This refers to the average results and not to the results

of any particular year in which the total disbursements of any one company may exceed the receipts, or be well within them.

Dividend and Profits. — The subject of dividends or profits in the fire insurance business remains for final consideration in this discussion of the finances of the business. In the first place, it is necessary to define what is meant by the profit in the business of fire insurance and to understand the source of it. The stock fire insurance company has two sources of income out of which profit may be paid.

Source of Profit. — First, the net profit on the indemnity sold; that is, an excess for example in the premiums on one-year policies over the losses paid on such risks and all the expenses connected with them. This net profit in premiums received over losses and expenses paid incident to the business may be called the net underwriting profit.

Second, the interest on invested funds. This interest arises from two kinds of funds. First, the interest on funds paid in by policyholders for protection which is in the course of being earned. This is the unearned premium reserve. Second, the capital stock and the surplus, which is the property of the stockholders, the first having been originally contributed by stockholders at the time the company was organized and the second having been set aside from past earnings. Both capital stock and surplus are potentially sources for the payment of losses, but they are directly the property of the stockholders and not of the policyholders, as is the reserve or unearned premium.

Underwriting and Gross Profit. — In order to calculate the trade profit, a distinction must be made between the true underwriting profit and the gross profit. The trade profit is determined by taking the premiums earned during the year and then deducting the expenses and losses incurred during the year. To this is added the interest earned during the year, at the average rate received during the time on the unearned premium fund, first deducting from it the unpaid premiums. Practically all of the interest earned on the assets of the company, and especially that on the surplus, is trade profit, excluding of course the interest earned on the capital stock. This is true, because in fire insurance as contrasted with life insurance the item of interest earning is not primarily considered in determining rates. However, since the net surplus represents the accumulations of past years, the interest earning on it should not be considered in determining the trade profits of a single year.

Rules for Determining the Profit of a Company. — Since insurance policies are written for other than one-year periods, the reports which show the percentage of incurred losses and expenses to premium receipts on an annual basis should not be interpreted to prove completely the prosperity or lack of prosperity of the company. Inquiry must be made as to whether the losses reported are for losses incurred or losses paid. Premiums and losses for a year disclose but little important information as to the real condition of the company. Premiums are not chiefly received for one-year contracts. Only that portion of the premiums which

has been earned belongs to the company. Nor is the percentage of fire loss to unearned premiums a satisfactory test of comparison. This could be used only of companies of five or more years' experience in business which have had a steady and even volume of business. Warning needs also to be given against a ready acceptance of statistics which seek to show that the fire insurance business is not and never has been a successful business from the standpoint of the investor. Such reports and statistics usually include the experience of all companies, thus embracing those dishonestly managed and those inefficiently operated. If a similar tabulation were made of almost any business, it could probably be shown that it had proven a failure. Pure profit in a competitive business is a differential return which tends to disappear, and from its very nature cannot be secured by all the units in the business. It is safe to say that capital in the fire insurance business has, at least in the successful companies, enjoyed a normal return. Otherwise it would have left the business and new capital would have refused to enter. It is doubtless true that new capital has been attracted to the business which the possibilities of securing a return did not warrant, and it is to this phase of the question that our discussion is now directed.

Has Fire Insurance been Extremely Profitable? — It has long been a popular belief that the business of fire insurance is very profitable to those engaged in it. Nor is the belief confined to the uninformed classes. It is frequently held by the business classes, legislators, and others whose general information make them intel-

ligent on most questions. It is submitted that the above statement is not a mere assertion, but that the evidence of the existence of this belief is found in certain facts. In the first place, there are but few examples of legislatures which are not ready to welcome any new method of taxing the stock fire insurance companies or increasing present taxes. Such companies are usually foreign; that is, they are chartered in another state or they are foreign companies. As foreign institutions they come under suspicion as strangers or at least of deserving no such consideration as would be granted to a home institution or to a member of one's own group. These companies seem to be the means of "taking money out of the state," and therefore any of the money which can "be kept at home" by taxation represents so much clear gain. It is an interesting example of the persistent survival of the ideas of the tribal society, when a stranger usually meant an enemy. Special laws for the taxation of insurance companies are in existence in practically every state, and usually a distinction is made between domestic and foreign companies. In the second place this belief in the excessive profits of fire insurance business is indicated by the numerous new companies which are organized. The following table shows the number of companies organized during different periods and their assets as of 1914.

A study of this table discloses several important facts. In the first place eighty-four of the two hundred and twelve companies in existence, or practically forty per cent, have been organized since 1900. If the period 1890 to 1914 is taken, that is, twenty-five years, forty-

eight per cent of the companies doing business in 1914 had been organized during this period. In the second place comparatively few companies of those now in business were organized between the years 1870 to 1900. The succeeding table of failed and retired companies explains this fact, interpreted in the light of the past discussion of rate-cutting and legislation of this period.

Date of Organization	Number Organized	Assets								
		Less than 100,000	100,000 to 200,000	200,000 to 500,000	500,000 to 1,000,000	1,000,000 to 2,000,000	2,000,000 to 5,000,000	5,000,000 to 10,000,000	10,000,000 to 20,000,000	Over 20,000,000
Before 1850 . .	29		1	3	4	4	5	6	4	2
1850–1869 . . .	50		3	6	9	12	11	4	3	2
1870–1879 . . .	15			5	3	3	1	1	1	1
1880–1889 . . .	16	1	2	4	2	6	1			
1890–1899 . . .	18	1		6	4	5		1 (*d*)	1 (*c*)	
1900–1914 . . .	84	9	15	35	12	9	3(*b*)		1 (*a*)	
Totals . . .	212	11	21	59	34	39	21	12	10	5

In the third place practically all of the strongest companies, as measured by assets, which are now doing business were organized prior to 1880. The company designated in the table 1(*a*) was a consolidation of two old and strong companies. Of the companies designated 3(*b*), one was organized by another old company with large assets to take over a part of its business, one transacts only a marine business since 1901, having reinsured its fire business in another old and strong company. The remaining company with assets over ten million dollars was organized since 1900.

The companies designated 1(*d*) and 1(*c*), organized in the decade 1890–1899, were in both cases consolidations

of two old and strong companies. It may be said, therefore, that, with one single exception, all the fire insurance companies with large assets are old companies; or in other words, that the chances of organizing a large, successful fire insurance company, as disclosed by the experience of the past, are decidedly unfavorable.

Failure of Companies. — What has been the experience in organizing companies? The following table shows the companies that have failed or retired. This fact may be taken as a general index of success in establishing the business.

FAILED OR RETIRED FIRE INSURANCE COMPANIES

Before 1850	26
1850–1869	132
1870–1879	353
1880–1889	229
1890–1899	708
1900–1914	897

This shows that two thousand three hundred and forty-five fire insurance companies have either failed or retired or that only about ten per cent of the fire insurance companies which have been organized have continued in business. If an explanation of the results shown in these two tables is sought, which is but explaining what the nature of the handicaps are that rest upon a new company, the following facts are important.

Causes of Failure. — First, the failure of new companies to set aside sufficient funds as a surplus. A large capital is required to secure business and provide the expenses of organization and development. In the earlier days there were either no unearned premium

reserve laws, or if they existed, they were less stringent than those now in force. The reserves were estimated by the officers of the company. The absence of other regulatory provision made it possible for the company to use to the fullest extent their available funds. The present method of calculating reserves in its effect on new companies has been previously discussed.

A second disadvantage to a new company is the increase in the expense ratio. This has been shown in a previous table. Not only have commissions increased during the past fifty years, but also taxes, rents, and other overhead charges.

A third difficulty of a new company is to secure a proper agency force. The old company has an enormous advantage, both from the standpoint of the agent and the property holder who is seeking insurance. The new company may seek to get business by offering higher commissions. It is not unlikely to accept a poorer grade of risks in an effort to get business on its books, for the fixed expenses go on either with a small or with a moderately large business.

A fourth difficulty is the lower level of rates which now prevail as compared to the earlier period. Competition and regulation have forced rates to low and often to unprofitable levels.

A fifth disadvantage is that resulting from a conflagration in the early life of the new company before it has had time to accumulate a surplus. Few investors can be persuaded to set aside large funds in the purchase of capital stock in a fire insurance company to serve as a surplus for the company which cannot pay any

considerable dividend on the stock for a number of years. They prefer to loan their capital themselves at a safe rate of interest or to place it in those investments where there is a prospect of a more than normal return. If a conflagration occurs, it may take all the small surplus and capital as well as making necessary an assessment on the shareholders to pay the losses.

The most available business for a new company is likely to be: first, risks in congested districts of large cities where there is often a deficiency in the supply of insurance, but which by its very character has an element of great danger in it for the new company; and second, the short-term business of a year or less which brings with it a high ratio of expense. It is the business which becomes seasoned that is most profitable for the fire insurance company. The hazards of all kinds become better known and the rate is adjusted if necessary to measure them.

Dividends of Stock Fire Insurance Companies. — The following table shows for the period 1890 to 1914 the average dividends paid by the fire insurance companies and the number which paid dividends. It would seem upon a casual examination of this table that the business has been profitable to a marked degree. Statistics of the dividends declared by a single company, which often exceed any rate shown in the preceding table, are often quoted to the public or prospective investors to prove that the business of fire insurance has been profitable and offers a good investment. However, in addition to what has previously been stated regarding the failure and success of new companies, the following facts must be considered.

DIVIDENDS OF STOCK FIRE COMPANIES

	Number Paying Dividends	Number not Paying	Ratio of Dividends to Capital
1890	100	7	
1891	98	9	11.05
1892	100	9	10.51
1893	97	11	10.43
1894	101	7	10.60
1895	106	6	11.40
1896	108	5	11.24
1897	108	11	11.33
1898	114	6	11.64
1899	114	8	11.65
1900	108	12	11.18
1901	110	16	11.63
1902	115	15	11.90
1903	117	15	12.69
1904	117	18	13.37
1905	119	24	13.01
1906	127	21	10.97
1907	123	32	11.67
1908	142	17	13.17
1909	146	24	14.27
1910	155	21	16.95
1911	153	29	15.75
1912	156	35	16.00
1913	160	44	15.26
1914	169	50	15.43

The capital of a fire insurance company is often only a small amount in comparison to the accumulated assets. This capital has often received no dividends for a period of years. A surplus has been set aside by the stockholders instead of using it to declare dividends. A one per cent earning on the total surplus may express itself as a ten or twenty per cent earning on capital. This surplus and capital are both at risk in the event of

excessive losses. The unearned premium reserve must at all times be kept intact.

Summary. — From this survey of fire insurance as an investment several deductions seem to be warranted: first, the returns on the investment as a whole have not been large. Some companies have had successful careers in this respect. Many of them have had alternate periods of success and failure. Most of them have failed. Second, it is not impossible to establish a successful new company, but if it is to be done, the investors should expect to contribute a large capital in order to begin business with a considerable initial surplus. They should expect to wait a period of years before any dividend is declared. Third, the popular opinion as to large profits and the frequent appeal based upon it by salesmen of fire insurance stock to investors to purchase stock in new fire insurance companies is not justified by an examination and analysis of the actual experience of such companies in the United States.

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CHAPTER XI

FIRE PREVENTION AND THE FIRE LOSS

The Fire Loss. — The statistics of the fire loss in the United States show that $5,866,981,025 worth of property has been destroyed during the period 1877 to 1915. This does not represent the actual loss, since these statistics refer only to the reported losses on buildings and contents. Many small losses on uninsured property as well as losses of natural resources, as in the case of forest fires, are not included. In general, the reported losses mean that on the average a quarter of a billion dollars worth of property is annually destroyed; that is, a half million a day or thirty thousand dollars worth of property every hour of every day in the year. Nor does this enormous loss show any marked indication of a decrease. Reference to the preceding table on page 88 will show that there has been on the contrary an increase throughout the period.

Its Economic Significance. — This loss is often designated "the fire waste" and very properly so, both because the capital, represented by the buildings and their contents, is a complete destruction and also because a larger part of it can be prevented. The insurance money paid by the company represents a tax or burden on productive enterprise which has no productive action or credit to equalize the liability. It is

a real loss which because of its regularity in this country has come to be considered as inevitable. But fires, like death and disease, if not absolutely preventable, can be both reduced and prevented. Untimely death and disease have become matters of great concern to the people of this country, and well-directed efforts are put forth to control them. If corresponding interest and activity could be aroused to prevent fires, the results would be equally gratifying. Not only is a vast and unnecessary amount of property destroyed, but also a large number of lives. There are other losses, such as those represented by the interruptions to business activity of those whose property is destroyed and those with whom they transact business. In addition any complete estimate of the cost to society of the fire loss should include the large sums spent to equip and maintain fire departments, waterworks or that part of them used for fire fighting, fire prevention bureaus, and the numerous other agencies, private and public, which seek to control the loss by fire.

The following tables, based upon an investigation by the Federal Government, show the losses on different kinds of buildings in cities and rural districts and in different political subdivisions.

This per capita loss equals or exceeds in many cases the local tax rate levied in these communities. It is impossible to determine how much of the total loss is due to the spread of fire from the building of origin to surrounding buildings, but it has been estimated that at least twenty-five per cent is due to this cause, that is, to exposure. This exposure loss arises largely from the

numerous frame buildings. In Europe where fireproof construction is the rule, the loss from exposure is much less; that is, the fire is usually confined to the building of its origin and frequently to the particular part of the building in which it originates. It will be observed that the table showed only a loss of $68,425,267 on brick buildings, whereas the loss on frame buildings was $146,659,442.

TABLE I. — FIRE LOSSES IN THE UNITED STATES FOR 1907

(Statistics gathered by the United States Geological Survey)

	Total	Urban	Rural
Total fire loss	$215,084,709	$107,093,283	$107,991,426
Buildings	109,156,894	50,173,625	58,983,269
Contents	105,927,815	56,919,558	49,008,157
Brick, etc., buildings	68,425,267	48,908,744	19,516,523
Buildings	31,092,687	19,816,474	11,276,213
Contents	37,332,580	29,092,270	8,240,310
Frame buildings	146,659,442	58,184,539	88,474,903
Buildings	78,064,207	30,357,151	47,707,056
Contents	68,595,235	27,827,388	40,767,847
Number of fires	165,257	105,406	59,851
Number of fires in brick, etc., buildings	36,140	25,297	10,843
Number of fires in frame buildings	129,117	80,109	40,008
Loss per capita	2.51	2.54	2.49

The total urban loss was about the same as the loss in rural districts, notwithstanding the larger and congested property values in the cities. On the one hand,

the city has the congestion of buildings and contents value with a large element of exposure hazard to account for the large loss, while rural districts have little congestion, practically no exposure hazard, but no efficient fire departments and waterworks to reduce the loss. A further analysis of the table will show that the losses in the cities are kept down to a large extent by the excellent fire departments. It is said that the United States has the best fire departments in the world, and they need to be, in view of the enormous hazard of fire in the American city.

The loss by conflagrations has already been discussed, but it may again be emphatically stated that, notwithstanding these excellent fire departments, no American city or village is free from the possibility of their occurrence. Fire traps are present in every city. There are buildings of poor construction, of large area without fire cut-offs, with unprotected windows and openings between floors, and with combustible contents and fire-producing processes which breed conflagrations. Fire once started in such buildings spreads rapidly through them and to adjoining buildings, thus starting a conflagration which the best fire department with the most complete water supply is powerless to control.

The fire loss in European countries and cities is, for reasons to be discussed later, much less than in America, as is shown by the following tables.

This per capita loss of thirty-three cents in these European countries is to be compared to the $2.51 per capita loss in the United States, as shown by the statistics in the following table:

FIRE LOSSES — SIX EUROPEAN COUNTRIES

(National Board of Fire Underwriters)

COUNTRY	YEARS	ANNUAL AVERAGE	POPULATION, 1901	LOSS PER CAPITA
Austria	1898–1902	$7,601,389	26,150,597	$.29
Denmark	1901	660,924	2,588,919	.26
France	1900–1904	11,699,275	38,595,500	.30
Germany	1901–1904	27,655,600	56,367,178	.49
Italy	1901–1904	4,112,725	32,449,754	.12
Switzerland	1901–1903	999,364	3,325,023	.30
Average loss per capita				$.33

The following table shows a comparison of the losses in European and American cities of somewhat equal population.

(Statistics gathered by Geological Survey and Bureau of Manufactures. Each of the foreign cities is compared with the American city marked by the same numeral.)

EUROPEAN LOSSES FOR 1904

CITY	POPULATION	FIRE LOSS	LOSS PER CAPITA
1. Paris, France	2,714,068	$1,266,282	$0.47
2. Frankfort, Germany	324,500	99,492	.31
3. St. Petersburg, Russia	1,500,000	2,128,541	1.42
4. Birmingham, England	550,000	226,506	.41
5. Sheffield, England	426,686	75,989	.18
6. Toulon, France	101,602	55,391	.55
7. Bremen, Germany	203,847	78,372	.38
8. Molenbeck, Belgium	63,678	106,150	1.67
9. Laiken, Belgium	31,121	22,349	.72
10. Etterbeck, Belgium	23,992	19,504	.81

UNITED STATES LOSSES FOR 1907

City	Population	Fire Loss	Loss per Capita
1. Chicago, Ill.	2,049,185	$3,937,105	$1.43
2. Cincinnati, Ohio	345,230	1,971,217	5.70
3. Philadelphia, Pa.	1,441,735	2,093,522	1.45
4. Baltimore, Md.	553,669	916,603	1.66
5. Cleveland, Ohio	460,000	515,194	1.12
6. Atlanta, Ga.	104,984	225,237	2.15
7. St. Paul, Minn.	204,000	522,447	2.56
8. Evansville, Ind.	63,957	196,702	3.08
9. Oshkosh, Wis.	31,033	80,500	2.59
10. Easton, Pa.	25,238	32,073	1.27

A comparison of the cost of maintaining fire departments in European and American cities shows that in the former cities it is about twenty cents per capita, while in the United States it was (1907) one dollar and fifty-three cents per capita. Thus not only is the per capita actual loss by fire seven times as great in American cities, but the cost of fire departments is also about seven times as great as in European cities. If conditions in this country were similar to those in Europe, there would be this twofold source of saving; that is, in the lower actual loss and in the reduced outlay for fire departments and other public methods of controlling fires.

Causes of the Fire Loss. — Such is the statement of the facts of the fire loss in the United States. It may now be inquired what are the causes of the loss. These causes may be classified as:

(*a*) Type of construction, including not only the character of the material, but also the method of building.

(*b*) The theory of personal responsibility.

(*c*) The theory of fire insurance as expressed in regulatory laws.

(*d*) Overinsurance.

(*e*) Arson and incendiarism.

Construction and the Fire Loss. — (*a*) The large loss by fire in the United States is primarily due to poor and defective construction of buildings and equipment. The most important factor in this is the predominance of frame buildings. In European cities such buildings are prohibited in the cities except that occasionally frame sheds or non-permanent parts of a building are infrequently found. Lumber in most cases is not in Europe the cheaper building material. The buildings are of brick, stone, or other fire-resisting material, and in addition are built under very strict inspection both as to original construction and use. In addition in many cases insurance is compulsory, and every one has a direct interest in preventing a fire. Lumber in the United States in general was until recently, and yet is in many sections of the country, the cheapest material for building. This economic interest has expressed itself in the liberality of laws and in other regulations governing the construction and use of buildings. This country has been developing so rapidly, and the growth of the cities with respect to the particular location of classes of business has been so uncertain, that the buildings have lacked that permanent element which has characterized the older cities of Europe where business has become more stabilized. Property values have so frequently changed in our American cities without reference to any acts of the owner or occupier that

flimsy and temporary construction has often been the rule both as to business and residence buildings. The large loss on frame buildings has been shown in a previous table, and that this type of construction is responsible to a large degree for the heavy loss is further indicated by the following tables.

PER CAPITA FIRE LOSS FOR 1907 IN ELEVEN STATES WHERE TIMBER IS SCARCE AND IN ELEVEN STATES WHERE TIMBER IS PLENTIFUL

(Statistics gathered by the United States Geological Survey)

	Total Population	Total Fire Loss	Loss per Capita
Group 1: States in which timber is scarce: Iowa, Illinois, Oklahoma, Connecticut, Delaware, New Jersey, South Dakota, Rhode Island, Kansas, Nebraska, and North Dakota	16,785,460	$38,606,558	$2.30
Group 2: States in which timber is plentiful: Washington, Louisiana, Texas, Mississippi, Wisconsin, Arkansas, Michigan, Pennsylvania, Minnesota, Oregon, and North Carolina	25,569,533	73,895,950	2.89

" The remarkable feature is the per capita loss in the South-Central States, — Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas,— namely, $3.66, more than $1 in excess of the per capita loss in any of the other divisions. All of the states in this division except Oklahoma contain much timber and

therefore many frame buildings. These states also have the handicap of inefficient fire protection as compared with the states of the North and East. The total losses and the loss per capita according to geographic divisions are shown in the following table."

PER CAPITA FIRE LOSSES FOR 1907 IN THE UNITED STATES BY GEOGRAPHICAL DIVISIONS

(Statistics gathered by the United States Geological Survey)

Geographic Division	Total Population	Total Fire Loss	Fire Loss per Capita
North Atlantic:			
Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania	23,779,013	$59,447,532	$2.50
South Atlantic:			
Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida . .	11,574,988	25,349,223	2.19
North Central:			
Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas . .	29,026,645	68,793,148	2.37
South Central:			
Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Arkansas	16,368,558	59,908,922	3.66
Western:			
Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, California	4,783,557	12,676,426	2.65

Partly because of the extensive use of lumber, due to its cheapness, the people have been unwilling to adopt

strict building codes and other legislation, regulating the use of buildings. As for compulsory insurance, this would outrage the American people's conception of individual liberty.

Legal Liability and the Fire Loss. — (*b*) The theory of personal liability: Notwithstanding that the principle of liability for damages inflicted by the acts of one person upon another is a well-recognized one in the common law of this country, it has had little specific application to the case of fire occurring in one property which unnecessarily does injury to another. Neither is the common or the statutory law in the United States ordinarily applied to permit recovery for damages in such a circumstance. In Europe individual responsibility for fire loss has long been a recognized principle in law. In America there is no public opinion which would uphold a court in considering one whose property is permitted to become a fire menace a public offender in the event his property burns and thus causes incidental loss to his neighbors.

The theory of damages has had no such application, and there is yet little indication that it will be extended to cover such cases. Yet there are good grounds for such an application. Why should a property owner be permitted either to construct or to use a building which is a menace to the property of his neighbor, who is either absolutely helpless to protect himself or is compelled to make unnecessary outlays to protect himself against the carelessness and indifference of the adjoining property owner? It is true that in some states the fire marshal has been given power to raze buildings, and property owners are sometimes required to change the

construction or use of buildings on the grounds that they become public nuisances or unduly endanger other property. Yet this is far from recognizing in law a theory of damages that permits recovery against an adjoining property owner in whose property, either because of inferior construction or improper use, a fire occurs which entails a loss upon other property owners. The complete application of such a theory would permit recovery against an occupier or lessee by the owner or lessor insured. Property owners are expected to look to the insurance company — which means other property owners — for recovery of losses. Not the least effective manner of reducing the large loss by fire in the United States would be an extension of this principle of liability to owners and occupiers of property. It would bring to the attention of property owners, as nothing else could do, the fact that fire losses are primarily in the control of property owners and not in insurance companies and fire departments.

Regulation and Fire Loss. — (*c*) The regulations governing insurance as expressed in laws and actual practice are also responsible in part for the large fire loss. Excessive competition has been encouraged. This has often resulted in companies accepting risks which are likely to burn and expose other property. Valued-policy laws are in force in many states, and this tends to make property owners less careful in the use of their property. Anti-coinsurance laws are also in force in many states. The character of these laws has been previously discussed. Their relation to the fire loss as well as to the fire rate or charge is important.

Overinsurance. — (*d*) Overinsurance is related to the preceding causes of the fire loss. Property owners who have their property insured to its full value or in excess of its value are likely to be indifferent in many cases about the occurrence of a fire. This does not often express itself in criminal acts, causing fires, but in the careless use of property. If the loss was confined to the single property, it would not be so serious, but other property is also exposed to loss. No one should, in insurance theory, benefit in a personal manner from his insurance policy. But in actual practice individuals sometimes do. This, like all other unnecessary losses by fire, expresses itself as a higher charge for insurance, for it cannot be too often emphasized that the public and not the insurance company pays fire losses.

Arson. — (*e*) Arson and incendiarism are also to be listed as causes of the large fire loss in the United States. A distinction must first be made between arson and incendiarism. In general it may be said that incendiarism is a term used to refer to those cases where the owner deliberately burns his own property, whereas arson is used to describe those cases where the property of one is deliberately set on fire by another. The terms in popular speech are often used interchangeably. In both cases they are concerned with the Moral Hazard of the risk. These terms do not include all cases of intentionally produced fires. Fires intentionally produced usually result from: (*a*) insanity, drunkenness, mania for excitement; (*b*) to conceal crimes; (*c*) as a means of securing revenge; and (*d*) for the purpose of gain. There are no available statistics as to the number

of fires which are due to the above causes. After all allowances are made for the Physical Hazard and carelessness, there doubtless remains but a small percentage of all fires which are due to incendiarism and arson. Much is made in the press and public discussion of "arson gangs," with the result that an exaggerated importance is likely to be attached to these causes of fires. Yet they are not unimportant. The National Board of Fire Underwriters has since 1873 offered rewards for the detection, conviction, and punishment of incendiarism. The money to pay such rewards is contributed by insurance companies which are members of this National Board. The conditions were amended in 1913 to include not only those acts of criminal intent, but also the acts of the insane or feeble-minded which caused fires. Since 1873 there have been offered 6483 rewards, totaling $2,148,975, of which 285 have been paid, totaling $86,324. This was only 4.17 per cent paid of the amount offered. There were during the period 1873 to 1915 388 convictions. The explanation of this large amount of unclaimed reward is due to several facts. In the first place it is difficult to secure the interest of the owner or the public in an effort to investigate suspicious fires. The public is disposed to think that it is the business of fire insurance companies to pay losses. They often argue, "that is what they are for," and resent too inquisitorial acts on the part of "the rich insurance companies." There is often a prevalent public hostility to insurance companies which public officials, such as police officials and prosecuting attorneys, sometimes show.

In the second place the appointment of fire marshals

in some states and cities has removed any necessity of a reward. These officials have, as an important part of their duty, the investigation of the causes of fires, and in a number of cases they have been responsible for the discovery and prosecution of those guilty of arson or incendiarism. Public officials in the course of performing their duty are not eligible as claimants for any of this reward. Statistics from those states which investigate the causes of fires most carefully show that about three per cent of the total number of fires were classed, as to causes, "incendiary" or "suspicious," while about thirteen per cent was classed as "unknown." What per cent of these "unknown causes" was due to arson and incendiarism cannot be stated, but if a liberal estimate is made, as one half, this added to the known incendiarism and suspicious percentage would make a total of ten per cent of all fires which are due to arson and incendiarism. If the fire loss of the country averages $225,000,000, this would be a sum of twenty-two and one half million dollars as the amount lost by arson and incendiarism. This is probably a very liberal estimate, but the sum, if much less, is not an inconsiderable amount to lose by such causes. However meager the available statistics, they are sufficient to disprove both the popular notions that insurance companies are responsible for arson and incendiarism and also that a large percentage of the fires are due to these causes.

Specific Causes of Fires. — An investigation was made by a committee of the Wisconsin legislature of the causes of fires in forty-four American cities covering 42,311 fires. These cities had an annual fire loss of

about $40,000,000, and the statistics given on the following page may be taken as representative of the direct causes of fires in American cities.

It will be seen from this table that the causes of 28⅓ per cent of the fires were not ascertainable. In many such cases the fires were so quickly destructive that all evidence of the causes was burned up. In other cases the fire started from causes which are yet to be discovered by man. These unknown fire causes are the more dangerous because of the mystery which surrounds them.

The Fire Loss and the Fire Waste are evident, but it should be understood that when it is stated that this loss is not decreasing, reference is made to the aggregate property loss by fire. To determine whether the loss is absolutely increasing it should be correlated with the total property values. That is, even an annually increasing fire loss might not in respect to total property values in the country be on the increase. There are no accurate statistics of the total building values of the country, and hence such a comparison cannot be made. The loss can only be compared to the total value of insured property, and as has been shown, the burning ratio shows no marked decrease.

Fire Prevention and Protection. — In view of this loss, what are the agencies by which fires are sought to be prevented and controlled? In the first place fire prevention may be distinguished from fire protection. Little can be done to prevent fires, since practically all material is in some degree combustible. All that can be done is to reduce the degree of combustibility by

Cause	Number Fires	Per Cent Fires
Ashes, hot	809	1.91
Automobiles	205	.48
Boilers, defective	46	.11
Candles	761	1.80
Cigars, cigarettes, and pipes	1,681	3.97
Chimneys, sparks from	934	2.21
Chimneys, defective	2,136	5.47
Clothes too near stove	62	.15
Electric wiring, defective	1,097	2.59
Fireplaces, defective	209	.49
Fireworks	313	.74
Flues, defective	1,346	3.18
Fumigating	73	.17
Furnaces, defective	1,159	2.74
Furnaces, overheated	292	.69
Gas, explosion	773	1.83
Gasolene, explosion	885	2.09
Gas jets, contact with curtain draperies, etc.	492	1.16
Gas, leak	204	.48
Grease	548	1.30
Incendiary	657	1.55
Lamps	783	1.85
Lightning	156	.37
Locomotives, sparks from	1,227	2.90
Matches	2,663	6.30
Moving picture machine	17	.04
Rubbish, burning	4,452	10.53
Smokestacks, sparks from	407	.69
Spontaneous combustion	774	1.83
Steam pipes, overheated	161	.38
Stoves, defective	682	1.61
Stoves, gas	276	.65
Stoves, gasolene	417	.99
Stoves, oil	253	.60
Stoves, overheated	599	1.42
Stovepipes, defective	1,120	2.65
Stovepipes, overheated	90	.21
Tar, paint, varnish, etc.	201	.47
Unknown	12,056	28.50
Water pipes, thawing	341	.81
Carelessness, general	252	.59
Explosives, other than gas and gasolene	522	1.23
Total	42,311	100.00

such means as using material which does not ignite and burn easily, and so constructing the building and regulating its use as to reduce the chances of fire occurring. When the phrase " fire prevention " is used in connection with public and private agencies and devices, relating to fire, protection from fire is usually meant, since these agencies are chiefly concerned with the discovery of the fire, the transmission of the alarm, and the extinguishment of the fire. Before discussing these agencies and devices for fire protection, some general factors which tend to reduce the fire loss may be noted.

Factors Reducing the Fire Loss. — The accurate measurement of the fire hazard by a system of schedule rating tends to reduce this loss, because it not only gives a credit in the charge for every improvement by the owner in the risk, but it also induces him to take an interest in improving the general protection for the community. This expresses itself as an interest in securing better fire departments and water works; better building codes, better streets, more careful use of his neighbor's as well as his own property, and in many other ways. That is, schedule rating brings fire protection and prevention to the citizen as a dollar and cents proposition. Probably no other one thing has done more to reduce the fire loss than devising a fire rate which measures the hazard by this system of debits and credits.

Fireproof Buildings. — Construction as it expresses itself in fireproof buildings has been suggested as a factor affecting favorably the fire loss. But however fireproof the material may be, its arrangement in the

building, as well as the contents of the building and its use, often make the term "fireproof" of little significance so far as the loss by fire is concerned. More than one "fireproof" building has been destroyed by fire and many more have had their contents burned. The warning need scarcely be given that many buildings advertised or stated to be fireproof are far from it. Constructing and advertising fireproof buildings has become so popular since some of the recent conflagrations in the United States, that this popularity itself should arouse a suspicion as to the real character of many of these buildings, reported as fireproof. None of the most extensively used building materials in cities has a high degree of combustibility. It is in the arrangement of the building with respect to hallways, stairways, openings between floors, communications on the same floor, and in other respects, such as the character of the occupancy, that the absence of the "fireproof" character is to be found. The certainty with which a fire is prevented from spreading in the building or to the building from an outside source gives it the true character of a fireproof building.

Educational Agencies. — Another general factor which has tended to reduce the fire loss is the educational work which has been done. This takes the form of publicity work of many kinds. Fire Prevention Societies are organized to direct the public's attention to the enormous loss by fire and to acquaint them with methods of reducing it. Fire-prevention days and "clean-up days" are proclaimed by governors of states and mayors of cities. Public lectures on the subject are given. Schools

and colleges direct attention to the subject. The public press prints articles or publishes advertisements on the subject. Manufacturers of fire extinguishers, automatic sprinklers, and other devices, through advertisements of their article, have a part in this educational work in reducing the fire loss.

Private Agencies Reducing Fire Loss. — It has been stated that fire protection concerns itself with the discovery of the fire, the transmission of the alarm, and the extinguishment of the fire. The agencies and methods for fire protection may be discussed under the two classes of Private and Public Agencies. Among the most important private agencies for fire protection are the direct and indirect activities of the fire insurance companies. The effect of their system of determining rates has already been discussed. The National Board of Fire Underwriters, which is composed chiefly of the stock fire insurance companies, has established underwriters' laboratories which examine and test materials and devices for fire protection. Manufacturers submit their material to these laboratories for tests, which are made at cost. If they are satisfactory, approval is given and each article, such as a fire door, a conduit, a hose, an incubator, or fire extinguisher, has attached to it the laboratory's label of inspection. The results of the examinations are published or made available on printed cards at the inspection bureaus throughout the country, insurance offices, federal, state, and municipal offices. Much information is also distributed free to the public. The purpose of all this work is stated in the 1915 report of the Underwriters Laboratories to be " to

secure the best and fairest opinion regarding the merits or demerits of every device, system, machine, or material, in respect to life and fire hazards, and accident prevention, and to have the work so conducted and reviewed as to secure accuracy and uniformity in its findings." This object has been accomplished to such an extent that the majority of underwriters in the United States, many state and municipal authorities, plant operators, and a large number of architects, building owners and users, either accept or require a report from these laboratories incident to their recognition of devices, systems, and materials having a bearing upon fire hazards or accident prevention. Underwriters' Laboratories issue no guarantee that their findings will be accepted or recognized in any case. Such assurances can only be obtained from the authority having jurisdiction.

By the work of this organization and other activities of the parent organization — the National Board of Fire Underwriters — there has been a formulation of many rules for the installation and use of materials as well as the adoption of many standards for material and appliances. These organizations have coöperated in this work with insurance companies, the agents, inspectors, and inspection bureaus.

Effect of Inspection. — The inspection of property by insurance companies or by private agencies which do this work for the insurance companies has done much to prevent fires. The beginning of this work was when the risk was inspected at the time of writing the policy. Later the risks were inspected to secure cleanliness, but it has now developed into a system of regular periodic

inspection of everything connected with construction, equipment, occupancy, and processes. In fact a phase of this work begins before the building is constructed. The plans of the proposed building are often submitted to the insurance company or its representatives with the view of preventing fire and securing a low rate on the insurance. The contracts for construction work, especially with that part having to do with electrical installation, power equipment, and other hazardous features of the building, are inspected. Various phases of the construction work during the process of building are inspected, and finally upon completion of the building, a general inspection is made. At regular intervals an inspection is made of the building as to the use of it and the condition of the material and equipment under use. Municipal Fire Prevention Bureaus and local inspection bureaus do much of this work of inspection. All this activity operates powerfully to reduce the loss by fire.

Automatic Sprinklers. — One of the most important private agencies which gives fire protection is the Automatic Sprinkler System. It consists of peculiarly constructed water valves, a series of pipes throughout the building, and a source of supply of water. The valve is held shut by a solder which melts at a certain temperature. As this solder melts the valve opens and the water rushes up through the valve from the piping, into which the valve is screwed, against a distributing plate or deflector on the top of the valve. This causes the water to be sprayed out on the fire below. These sprinkler heads or valves are located at intervals of about ten feet each way on a smooth ceiling. They are always

located with the head pointing towards the ceiling except where a pendant position is absolutely necessary. The distance from the ceiling of the sprinkler head is from four to six inches. The fusible metal, which holds the valve closed, can be made to melt at any desired temperature. In the ordinary buildings of a mercantile character the metal melts at 160° F. The heat comes from the incipient fire below. The exact time elapsing from the beginning of the fire until the sprinkler head begins to discharge water varies with the height of the ceiling, the condition of the air in the room, the character of the fire, that is, whether it smolders or burns rapidly, as well as other circumstances and conditions. Ordinarily the time elapsing averages about a minute.

The amount of water discharged by a sprinkler varies with the pressure, but in an ordinary-sized head and pipe, fifteen gallons are discharged at a pressure of five pounds, nineteen gallons at ten pounds, thirty-one gallons at twenty-five pounds, and forty gallons at fifty pounds pressure. Each sprinkler covers and protects an area of about ten feet square, and even under a low pressure this discharges an amount of water far in excess of that falling during the most violent rainstorm. The rapidity with which the water is discharged and the amount discharged are therefore responsible for the marvelous success of automatic sprinklers as a fire protective device. There must be a sufficient number of these valves or sprinkler heads, and merchandise or material must not be piled up to the ceiling to interfere with their operation. The pipes into which these heads are screwed are run throughout the building into every

corner, into stairways, and between joists, so that water can be sprinkled on every space when fire breaks out. The success of a sprinkler system is wholly dependent upon getting water on a fire before it gets under headway. The size of these pipes differs, depending upon the number of heads which they are to carry and the amount of space they are to protect. They decrease in size as they are distant from the main supply pipes. The smallest pipe is $\frac{3}{4}$ inch and carries one head, whereas the three-inch pipe carries thirty-six heads. The piping must be securely fastened to the ceiling, for the value of the system depends upon the valves opening promptly. The pipes are slanted or pitched to drain them, the usual pitch being $\frac{1}{2}$ inch to ten feet.

This series of pipes running throughout a building is supplied with water from the main standpipes or "risers." Since the success of the system depends upon an adequate and certain supply of water, two sources of water supply to the main supply pipes are usually provided. One source is from a tank located on the roof of the building, or in the loft. The other source is from the city water mains, to which connection is made by the "siamese" connections, whereby water is pumped into the system. In some cases two tanks are used, one of which is a pressure tank, that is, a metal, boiler-like tank, partially filled with water under compressed air. In other cases special water pumps are used. In all cases the particular object is to get an adequate supply of water to the fire as quickly as possible.

The Wet, Dry, and Open Systems. — There are different kinds of sprinkler systems such as the "wet,"

" dry," and " open " systems. The wet system is one which contains pipes full of water at all times. The dry system, which is used when there is a danger of the water freezing, is one in which the pipes are normally empty. When a fire occurs, the fusible metal in the valve melts, the air escapes, releasing the pressure of the air which kept the water back to a definite point in the supply pipe where there was no danger of freezing. The water then rushes to the sprinkler head and discharges through it on the fire.

The open system is used to protect buildings against fires in adjacent properties. In this system the valves are open and the pipes are empty. Water is turned into the pipes and flows out through the open valves over the windows and walls or cornices and roofs to be protected.

Any system of automatic sprinklers must be carefully inspected from time to time to see that it is in condition to do promptly the work for which it was installed. Various signaling devices have been invented by which an alarm is given when a sprinkler head opens. This is necessary in order that aid may be given in case of a fire and also to protect the contents when a head may accidentally open, as, for example, from excessive heat, defective condition, freezing, or from any other cause. The chief alarm valves used are the electric and the mechanical alarm, which is automatically given to any desired point, such as the general office, the boiler room, or to a telegraph office.

Efficiency of Sprinklers. — The efficacy of the Automatic Sprinkler System is beyond question. The records of the National Fire Protection Association

cover 14,353 fires in sprinklered risks, of which 30 per cent were put out by one sprinkler, 46.6 per cent by not more than two sprinklers, 73 per cent by not more than six sprinklers, and 84.8 per cent by not more than twelve sprinklers. Less than 5 per cent of these sprinklered risk fires were not satisfactorily controlled, and this fact was due to the water being shut off, obsolete or corroded sprinklers, poor water supply, conflagration exposure, obstruction in the system, or inadequate number of sprinklers. New York in 1912 required the installation of an automatic sprinkler system in every factory building of over seven stories or ninety feet in height, in which wooden flooring is used and where more than two hundred people are regularly employed above the seventh floor or more than ninety feet above the ground. Their efficiency is recognized by insurance companies in making the insurance rate on the risk. An allowance from 10 to 90 per cent is made in the rate for a sprinkler equipment. These automatic sprinkler systems are efficient chiefly because they do not depend upon the human agency for their operation. They prevent a fire from getting under way. Manifestly they must depend on the human agency for proper installation and inspection to warrant that they will operate. They are installed by private companies.

In addition to the private agencies already enumerated which protect against fire, such others as those which manufacture fire extinguishers, fireproof paints, hose, and other devices may be mentioned. There is also the Watchman Service and Alarm Service. The Alarm Service is in general either: (*a*) Watchman, (*b*)

Automatic Alarms, or (*c*) Sprinkler Alarm Service. The Watchman Service with the different methods of reporting is well known. The Automatic Alarm Systems are chiefly dependent upon the thermostat; that is, a device which when sufficiently heated gives an alarm. When the temperature of a room is raised by heat beyond a certain point, an electric circuit is completed by the action of the thermostat. There are many different types of thermostats, some depending for their operation upon the expansion of metals or of volatile liquids, and others upon the releasing of air pressure, and others upon the making or breaking of an electric circuit by the melting of solder. They all rely upon their efficacy in transmitting a signal to a point where a fire has broken out in the building, and not as the sprinkler system, in putting out the fire. There are other minor private agencies which act as a protection against fire, but these are too well known to need discussion.

Public Agencies Reducing the Fire Loss. — There remain for consideration the public agencies for fire protection, and among others the following important ones may be discussed.

(*a*) Building Codes.

These codes regulate the construction, equipment, and use of buildings. It is, for reasons previously discussed, often difficult to secure the enactment of a good building code, but its effect on fire protection cannot be doubted. A great variety of subjects are included in building codes; such, for example, as the kind of material to be used in certain districts of a city, the thickness of the walls, the roofing material, elevators, construc-

tion, wiring and heating installations, fire escapes, the storing and use of materials in the buildings. The purpose of such codes is not only to protect property, but also persons who are employed in the buildings. Under the regulations of good building codes, the "fireproof" building is substantially fireproof in respect to any serious injury to the building, but too often the contents may be unnecessarily injured as well as considerable loss of life may occur in the event of a fire. The communications between floors, that is, doors, elevators, and partitions and divisions of a single floor, are often of a character which does not resist the spread of a fire. If elevator shafts are inclosed, if fire doors are used, metal window frames with wired glass, fire escapes, and a sprinkler system, there is in a fireproof building little chance that large injury will be done either to property or persons in case of a fire. No building is more fireproof than its doors and windows. To confine a fire to its point of origin is to control it.

The Height of Buildings. — There is some sentiment developing in this country to regulate the height of buildings, both because of the increasing fire hazard and also because of its relation to the subject of light in buildings, the congestion of people in the streets and on transportation lines, and other attendant evils. In European cities this matter has long been a subject of regulation. In the United States the streets were laid out before the era of skyscrapers, with the result that in many American cities the streets are much too narrow both to accommodate the street crowds and to permit a proper distribution of light. Examples of property values being greatly re-

duced by the erection of skyscrapers are not uncommon. The uneven building line is characteristic of American cities in the business districts, even in those of small population. The difficulty of escape from these high buildings by their occupants, in case of fire, has been illustrated many times. To secure the best results from the play of a hose stream of water on a fire, it is necessary to have the stream of water at as nearly a horizontal position as is possible. Beyond a height of eighty-five to one hundred feet it is necessary to enter the building and lay the hose or to depend upon elevators and standpipes which are likely to be unavailable. The fire apparatus will not usually deliver an effective stream of water to a greater height than one hundred feet. It is usually the practice, when the height of buildings is limited, to base it upon the width of the street, the ratio of building height being from one and one half to two and one half times the width of the street with a maximum height for the building. Certain exceptions are permitted in such provisions of building codes.

The importance of fire escapes in protecting life in case of fire is too evident to need discussion. There has been in the United States a strange resistance to providing them, and not infrequently are they improperly placed, inadequately supplied, and of a "makeshift" character.

Fire Marshals. — The work of fire marshals has had a very large effect in the prevention of fires and in reducing the loss of property and life. These marshals are, however, not found in a majority of the states. In some cases, cities have provided either for an official of

this character or have delegated similar work to regular officials or departments. When a specific law provides for the appointment of such an official by the state, special powers are granted. Deputy fire marshals are appointed to have supervision over specified districts of the state. The work of the fire marshal's office is of many kinds. The causes of fires are investigated, statistics of fires are collected, and a large amount of investigative work is done in connection with the condition of buildings, their use, and the installation of fire escapes. Buildings are condemned or are required to be demolished or their further use is prohibited. In addition a large amount of educational work is done through the public press, in public addresses, and in publishing annual reports. In some states textbooks or lessons on fire prevention are prepared for use in the public schools.

Fire Departments and Waterworks. — The relation of Fire Departments and Waterworks as a public agency for fire protection is very important. In practically all the important cities in the United States the fire department has become a public agency. In the earlier days the voluntary fire department was common, and in addition fire salvage corps were much relied upon to protect property at the time of the fire. The fire departments are, as a rule, in the United States efficient, especially in all the larger cities. The degree of efficiency depends upon several factors, such as:

(*a*) the personnel of the force. This depends upon the carefulness with which the members are selected, the ability of the head of the department, the free-

dom from political influence, and the certainty of tenure of position.

(*b*) The equipment of the department. This takes the form of adequacy in respect to number of men and apparatus; that is, the engines, hose, and other fire-fighting equipment.

(*c*) The most approved fire alarm system, in order that the department may quickly reach the fire, for the most important factor in reducing the fire loss is the control of the fire in its early stages. An incipient fire becomes in any American city a large fire and a conflagration because it is not controlled in its early stages. Economy in the government of American cities can least of all be afforded in connection with the Fire and Water Departments, for a devastating fire is a possibility in any city of this country.

The importance of the Waterworks Department as a public agency for fire protection consists chiefly in the adequacy of pressure and of water mains. Pipes of proper size in the business and residence districts with adequate pressure are absolutely necessary for the control of fires, either by private agencies such as sprinkler systems or by the public agency of a fire department. In a number of cities high pressure water mains are provided in the congested districts. Fire boats with powerful pumps are used in cities along the coast or large inland bodies of water to protect the property along the water front.

In addition to the preceding public agencies enumerated and other minor ones, there are also laws, regulating the shipping and storing of explosives and

highly inflammable materials. A federal law regulates the manner of shipping dynamite. Local laws regulate its storing. Laws regulate the shipping, storage, and use of such materials as nitroglycerine and gasolene.

In addition to the work of the private agencies in testing materials, various public departments of the federal, state, and local governments do a large amount of testing and inspecting materials as to their fire-resisting character. No nation spends as much per capita in the work of fire prevention and fire protection as the people of the United States in the form of an outlay after property is created. Yet the fire loss continues. It undoubtedly would be much greater were it not for this large expenditure. The hope for its permanent reduction is not primarily in increasing expenditures for the previously described agencies for fire protection, but in a clearer recognition of the false economy involved. That is, a permanent reduction will be made only when the people are willing to submit to more stringent requirements governing the building and use of property. The true source of reduction is not in fire protection as that term is now understood in the United States, but in fire prevention; that is, not in reducing the loss of property and lives after a fire occurs, but in preventing the fire from occurring.

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CHAPTER XII

RELATION OF THE STATE TO INSURANCE

The Bases of State Regulation of Insurance. — We have seen from the previous description of the character of insurance and the methods of its sale that it is a business which must concern itself with large numbers of individuals. It demands an agreement between sellers and buyers of a valuable thing — indemnity — in which the terms of the sale are frequently misunderstood. It demands the association of individuals in order to secure a thing which no one could secure for himself. It is a coöperation among many in which a general interest is present, but in which also an individual or a group of individuals may seek to benefit at the expense of the many. The contracts which are made, particularly in life insurance, continue for long periods of time and the settlements for which they provide cannot be enforced in most cases by the original party to the contract, but must rest either upon the good faith of the other party or upon the compulsion of a third party — the state.

Since the obligations of an insurance company are chiefly in the future, errors due to ignorance or dishonesty do not immediately disclose themselves. The policyholder cannot usually withdraw without loss to himself. The business of insurance, both on account

of the difficulty in comprehending the principles underlying it and also on account of the complexity of its actual transaction, is such that the average policyholder cannot determine for himself the soundness of the company. Even if he should discover evils in its operation, he usually neither knows how to correct them nor how to protect himself. The business of insurance is almost wholly conducted with the funds of the policyholder, who receives for his payments a simple promise to pay a sum at some future time.

There would therefore seem to be good reasons for the activity of the state in order that the principles of justness and equity may be preserved. The state should not only protect the weak against the unjust activity of the strong, but it should also prohibit large numbers of its citizens from doing an injury to themselves. In this last mentioned capacity, it should, for example, prohibit a group of individuals from organizing themselves into an assessment company to do a thing which past experience has shown to be impossible. The state is particularly interested in compelling contracts to be carried out, and since the insurance contract involves rights and benefits extending beyond the lifetime of one party to the contract, it finds an important sphere of action in the insurance business. It is also inevitable when a business has to do with so many persons, as does insurance, that some of these persons will at times attempt to practice fraud on the group, and this practice the state must seek to prohibit. Although insurance is a business in which many are necessarily interested, its very character precludes the many from having

any direct part in the actual conduct of the business, and it is therefore incumbent upon the state to do what it can to protect the many against the possible carelessness, ignorance, or dishonesty of some officials of some companies.

It is coming to be more clearly recognized that the state amidst the present-day complexity of commercial activities and the intricacies of modern business organization cannot depend upon publicity and competition to secure protection to its citizens. If publicity simply means informing the public what an organization is doing, the state defaults its duty to its citizens by this negative approval of the thing done and leaves in many cases but an incomplete means of redress, and in other cases none.

Popular Fallacies Regarding Insurance. — Much of the confusion in thought and opinion, as to what the relation of the government to the business of insurance should be, arises very largely from a general ignorance or a mistaken understanding of what insurance is. The popular notions and sophisms of insurance are to be found in the case of scarcely any other business.

The first fallacy is, that insurance is a completely competitive business and therefore the public can benefit in the price by encouraging and compelling independent action on the part of all companies in selling their commodity. This fallacy will be treated more fully in a later part of the discussion, but at this point attention may be called to the fact that both in life and fire insurance a large part of the work of the company is to distribute a cost already entailed on the public by the

mortality and burning rates. It is true that in all businesses there are overhead costs, and therefore there is a field for the play of competitive forces among the producers of the service; but a large part of the total cost in insurance is fixed by forces over which the producer has no control. In distributing this cost there may occur unjust apportionments of it and the overhead costs may be too large. Nevertheless, no amount of competition can directly affect for any one company the fixed charges which rest as a whole upon all companies.

The second fallacy is a popular notion that insurance is a business, suited for profit-taking, that is, profit in the technical economic sense. It is true that both life and fire insurance as conducted have often been and still are in some cases of this character. It is also true that denying to it these characteristics might seem to lead, as a logical conclusion, to a state monopoly of insurance. This is not, however, a necessary conclusion. Nor do life and fire insurance stand on a par as regards this profit-taking characteristic, for the reason that fire insurance has within it elements of risk, and also has demands for the enterpriser's ability which warrant under our present economic system, profit taking. It is believed, however, that the essential and fundamental characteristics of life insurance are such that only pure wages, rent, and interest are justified.

The third fallacy — In the third place it is generally believed that insurance is a peculiarly profitable business for those engaged in it; that is to say, that the stockholders or owners of the companies receive un-

usually high interest on the capital invested. This is supposed to be especially true in the case of fire insurance companies. Apparent proof of this fact is given by the quotations of the market value of fire insurance stock, some of which is many fold above par, and further by the large dividends of 20 to 30 per cent which some companies declare. These facts do not themselves warrant the conclusion that fire insurance stands out among other businesses as peculiarly profitable. The mere fact that no particular obstacles are in the way of any group of individuals organizing a life or fire insurance company, and the additional fact that there is always free capital seeking the highest possible return, irrespective of the nature of the investment, ought to be sufficient to prove the error in the conclusion. However, it must also be pointed out that the explanation of the returns in insurance, especially in fire insurance, as made by the companies, does not always express the exact financial condition of the business. It is often pointed out by fire insurance companies that the underwriting profit during the last fifty years has often been less than 1 per cent, and in some years has been nothing. This statement is correct, but it is not enlightening as to the financial experience of the fire insurance companies. The underwriting profit is only the remainder of the year's premiums after the loss payments and expenses have been deducted. Policies are written for periods of from one to five years which under the method of calculating the reserve previously described makes it impossible to take any one year's experience in fire insurance as a test of the profitableness of the

business. The ratio of losses to $100 of premium has during the past fifty years averaged 57.85 per cent, and the ratio of expenses to premium receipt has been during the same period 36.42 per cent. Such a calculation of profit on the basis of mere underwriting profit leaves out of consideration the item of interest earning. But not all of the interest earned can be counted in determining the actual profitableness of fire insurance companies. The funds on which such a company has to earn interest during the year are the capital, the surplus, and the reserve. If the company has, for example, $1,000,000 of capital and $14,000,000 in surplus, and declares a dividend of 30 per cent on the $1,000,000 stock, this 30 per cent dividend resolves itself into a 2 per cent dividend on the total capital set aside for conducting the business, to say nothing of the risk involved from the fact that the stockholders are liable for an assessment on the stock in the event of a conflagration, if they wish to preserve all or a part of the accumulated surplus. However, this would not be an absolutely accurate method of calculating the actual profitableness of the business. The amount of capital which a company has invested in the business has, from the standpoint of calculating the earning, little significance. Its chief function is in determining the ownership of the company, and only at times of crises in the affairs of the concern does it rise to importance in the financial aspects of the business. In an economic sense the real value of the company is not its capital value but what the business is worth or what it will sell for as a going concern. This going value or proprietary interest is

determined by the capital, the surplus, and by a percentage usually about 30 per cent of the reinsurance reserve.

This assumes that a fire insurance company, if in a normal condition, can reinsure its business for about 70 per cent of the reserve. It will be recognized, then, that mere underwriting profit, that is, the difference between what is paid in to the company and what is paid out by the company, is not a full explanation of the company's net earnings. If the above described methods of calculating the actual profitableness of the business are applied to the fire insurance companies, it will be found that no excessive returns have as a whole been received. If the six largest, the six smallest, six medium sized companies, six new and six foreign companies are taken for application of the method, the following results are shown: The six largest United States companies have earned during the past twenty years 10.1 per cent, ranging from a profit in one year by one company of 31.4 per cent to a loss in one year by another company of 49.4 per cent. The rate of dividends for these companies, computed on this accurate method, has averaged for the twenty years 5.4 per cent, that is, they have distributed of this average earning of 10.1 per cent a little over one half in dividends and have kept the remainder in the business, allotting it to the surplus, which means that it may all be taken by a conflagration. Applying the same method of calculation to the other groups, results in an earning of 6.6 per cent for the six medium-sized companies during the past twenty years, and of this 3.3 per cent was used for dividends. The six small-

est companies earned 4.5 per cent and distributed dividends of 3.4 per cent during the period. Of the six new companies three earned nothing during the period; of the six foreign companies, three lost money during the period. On the whole the investigation seems to show that it is likely to be only the old well-established companies which are profitable and also that there is a close connection between size, age, and success. In the second place it would seem to be clearly shown that the most successful companies have been earning about 10 per cent, of which 5 per cent has been placed back in the business. Ten per cent is considered a very good return in most business, but it must be recognized that 5 per cent is returned to the business and a risk of losing all of it is therefore incurred. Some return might be justified on this risk. These calculations were applied only to the larger companies. In many of the smaller companies the investors could doubtless have secured a better return by investing their capital in bonds, mortgages, or stocks other than insurance stocks. Nothing is here said in reference to expense. Whether the expense is or is not unnecessarily high is an entirely different question. All that is here attempted is to show that the common assumption that fire insurance is an extremely profitable business has no basis in actual facts. This, however, is not to state that a profit is not made, even an underwriting profit from certain states and on certain classes of risks. It is because of the fact that each state has control over rates, and these two previous facts that a large part of the discussion and dispute arise in reference to the rates and the profit

of companies. A particular state or locality finds that the fire insurance companies have received a certain amount of premiums from the state or section and have paid in losses only a fraction of this premium fund. It is but natural to conclude that the companies are making a large amount of money, and to have no great desire to help pay for the losses in another state or locality by permitting the companies to charge the same rates.

In the fourth place it is a popular notion that life insurance has in it the primary elements of investment. This popular notion has been largely a result of some of the policies sold and the zeal of life insurance agents in selling insurance as well as in the excessive competition of companies for business. Insurance properly understood and sold can never compete with other investments. Life insurance is not an investing institution. It can never return to the buyer a profit. As a protection, as a mutual risk-assuming device, it has been greatly retarded in its true development by having had attached to it many of the appendages of an investment.

Lastly, the fallacy still persists with many that the insurance companies pay for the losses. The truth is, that the companies only act as collecting agencies for the policyholders and have no source of income and should have none except the premiums of the policyholders and the moderate rate of interest which these premiums earn when invested in long-time non-speculative securities. Nevertheless, many holders of life policies expect a company to return to them from some mysterious source sums far in excess of the premiums paid and their earnings. In the case of fire insurance

policies, many object to becoming a coinsurer with the company of their property, and in many states the legislatures have prohibited coinsurance and have enacted valued policy laws, both of which laws are essentially based on an assumption, that a particular policyholder may collect money from a company as distinct from the policyholders. Courts and juries are often ready to give decisions in favor of a claimant against an insurance company notwithstanding that a burden is thereby imposed upon other policyholders and not upon the company. Accident policies are made collectible by law in some states in case of suicide notwithstanding that the contract was never intended to include suicide among the list of happenings which would make the policy payable. The payment of premiums is forgotten in the payment of the loss. It is this failure to balance the many against the few, the public against the individual, the long view against the short view, which leads to so many popular fallacies.

The True Character of the Insurance Premium. — It must never be forgotten that the insurance business is peculiar in this one particular; the property of insurance companies is not made up of tangible or even intangible things distinct from the policyholders. The property is the premiums of the policyholders, exchanged for a piece of paper, expressing a contract. Even the securities held by the company are either actually or potentially the property of the policyholders. The officials and agents are in a true sense the hired employees of the policyholders. And this is true regardless of the mutual or stock character of the company. Insurance

is even more than a public business like a railway. A railway company owns private property which is used in the service of the public, but an insurance company is service. It has no property other than the service it renders to the owners — the policyholders. Insurance of all kinds is essentially mutual, whatever modified forms this mutuality may take. It is but the voluntary contribution of the many to help bear the misfortunes of the few. Self-interest plays only a small part in that the bearer of the misfortune is unknown at the time the agreement is made. If a third party is introduced in addition to the individual members and the group — the first and second parties — it is only for the purpose of convenience, in that detailed and necessary work in operating the system is assigned to an employee, who becomes a middleman. This middleman simply collects the premiums and guarantees the payment of the losses, thus relieving the members of the group of any risk of assessments or premiums. Thus arises what is called stock insurance, the company selling a quasi commodity — indemnity; but even so, the business continues essentially mutual. No amount of surplus and assets would make possible a continuation of business or even the payment of the indemnity, if there were not this group of the insured, mutually bound together by the desire to protect each other against future misfortune.

Impelled by this motive of coöperation to protect each other, the life and fire insurance business has developed until it affects either directly or indirectly a large percentage of the people of the United States.

The stock fire insurance companies, alone, have risks in the United States of over sixty billions of dollars. There is an actual annual average loss of over $200,000,000. Not only is this actual loss distributed, but the distribution of the potential indemnity brings a state of security to the insured. It lies at the very foundation of the credit system.

In life insurance over twenty billion dollars of insurance is guaranteed by the ordinary and industrial companies, excluding assessment and other companies, just as mutual companies were excluded in the case of fire insurance. It is thus impossible to measure either the volume or importance of insurance.

Is Insurance a Public or a Private Business? — Two questions in relation to this business which has so wonderfully developed and which so intimately affects so many people are: *first*, Is it a public or private business, and *second*, Is it a competitive business? The answer given to these two questions largely determines the relation of the government to insurance. The first question, whether insurance is a private or public business, is assuming large importance at present, due to the discussion centering about rates. If insurance is a public business, then it follows that the government not only has a very extensive control over the prices charged for the indemnity and protection but also more substantial grounds exist for arguing that it should be made a state business, if not a state monopoly. Whatever may be the individual opinion as to the public or private nature of insurance, as a matter of fact the question as a purely legal one has been decided by the Supreme Court of the

United States in the case of the German Alliance Insurance Company *v.* Kansas, decided in 1914. (24 U. S. Sup. Ct. Rep. 612.) It was here held by a majority of the court that insurance was a public business. Business, said the court, may rise from a private to a public concern.

The decision pointed out that the risks in insurance are scattered over a large territory, and that therefore insurance rates are raised to a public issue. Contracts of insurance, therefore, have greater public consequence than contracts between individuals to do or not to do a particular thing whose effect stops with the individuals.

"To the contention that the business is private," said the court, "we have opposed the conception of public interest. We have shown that the business of insurance has very definite characteristics, with a reach of influence and consequences beyond and different from that of the ordinary business of the commercial world, to pursue which a greater liberty may be asserted. The transactions of a private character are independent and individual, terminating in their effect with the instances. The contracts of insurance may be said to be inter-independent. They cannot be regarded singly, or isolatedly, and the effect of the regulation is to create a fund of insurance and credit, the companies becoming the depositories of the money of the insured, possessing greater power thereby and charged with greater responsibility."

It was pointed out that the power to regulate interstate commerce existed long before the enactment of the interstate commerce law. That power, it said,

however, was exerted " only when the size, number, and influence of these agencies had so increased and developed as to seem to make it imperative."

Is Insurance a Competitive Business?— As to the second important question; namely, Is insurance a competitive business, there would not seem to be reason for such extreme difference of opinion as exists, if the real character of insurance is understood. There are two aspects to this question. Confusion and misunderstanding result because these two aspects of the question have not been clearly kept in mind. The first aspect of the question is whether as a matter of fact monopoly exists. The second aspect of the question is, Is the character of the business such that it should be considered a monopoly; that is, Does its conduct invite and secure a play of the competitive forces in price making as in the ordinary competitive businesses? The first question is easily answered by stating that in 1914 there were about 253 different life insurance companies in business in the United States, and at the same date there were about 605 fire insurance companies. New companies are continually being organized. There are, therefore, different units selling this service, and monopoly could only exist by proving that in each case of these 253 and 605 insurance companies, there was agreement as to the prices which were to be charged. This would need to be proven to exist among companies of such opposite interests as stock and mutual companies. The most superficial student of monopoly knows that it would be impossible to maintain an agreement regarding prices among such a large number of individual

units. It is often argued that a monopoly must exist by some secretly maintained agreement on account of the fact that comparatively few large life and fire insurance companies have recently been established. The greater number of such efforts have failed. Statistics show that no company of the first rank has gained a footing in fire insurance during the past thirty years, and further that since 1841 of fire and marine insurance companies, 2249 have either failed or gone out of business in the United States. Likewise, statistics show that 274 life companies have either failed or gone out of business since 1850. But this is to be explained by the character of the business. This brings us to the second aspect of the question: viz. Is insurance by its character suited to the principles of competition? This is largely determined by the extent of control which each of the producers has over the cost of his product, and by the control that the consumer has over his demand for the product. As regards the producer — the insurance company — it is recognized that the life insurance company has no control over the mortality rate nor does the fire insurance company have any considerable control over the burning rate. These factors, the mortality and burning rate, are by far the most important ones in determining the price for the producer. There is only left for determination, operating costs, and some of these, such as taxes, are also fixed for the producer. Again, certain minor fixed charges exist. There remain only about one third of the total costs, — which may be denominated variable costs, — over which the individual producers — the companies

— have control. On the side of the consumer, the buyer of insurance, there is little control over the price and little choice of product. He can have but slight effect on the mortality and burning rate, and thus bargain in his purchase. He has no choice of product for there is no substitute for insurance protection. As the court well remarked in the Kansas case previously noted:

"We may venture to observe that the price of insurance is not fixed over the counters of the companies by what Adam Smith called the higgling of the market, but forms in the councils of the underwriters, promulgated in schedules of practically controlling constancy which the applicant for insurance is powerless to oppose and which therefore has led to the assertion that the business of insurance is of monopolistic character and that 'it is illusory to speak of a liberty of contract.'

"It is in the alternative presented of accepting the rate of the companies, or refraining from insurance, business impelling if not compelling it, that we may discover the inducement of the Kansas statute."

Evil Effects of Excessive Competition. — The results of competition have been disastrous enough in both life and fire insurance as proved by their effects. We need not theorize about this matter. In life insurance it has meant among other things the organization of companies on unscientific plans which in their operation have brought loss to many. It has meant unnecessary expense in an effort to secure business, and a perversion of insurance to investment, the issuing of semi-deceptive policies, the payment of unduly high salaries, commissions, and other accompaniments of unrestrained com-

petition. In fire insurance the past and still too prevalent rate wars furnish ample evidence of the evil effects of competition.

"The universal effect of such periods of rate wars in fire insurance wherever and whenever they have occurred has been a cutting of rates to a point that was below the actual cost of the indemnity. If the rate war had been general, this would have meant the ultimate failure of the company, and rate wars of even local character lead, if long continued, to the dissolution of the smaller and weaker companies. The effect on all companies is weakening. The policyholder, to be sure, gets for a time his insurance very cheaply; too cheaply, for the weakening of the companies is not in the long run and on the whole an economic good, for there is just so much less protection behind the insured in case of a conflagration. The mutual character of insurance is so strong that nothing which tends to produce inferior protection can be for the public good. It has not done the policyholder any good to get cheap insurance if, when the time comes, the protection is found to be worthless.

"But this is not all. In a state of open competition the rates adjust themselves not to the hazards but largely to the strength of the insured, so that the man of influence, whose patronage is desired, will get his insurance too cheaply, as against the small man who is not in a position to drive a sharp bargain. That is, competition results in discrimination."

Such in brief is the elementary character of insurance. It is now for us to discuss the legal status of insurance

as it expresses itself not only in the law and in the court decisions but also in the regulation of the business.

Supreme Court Decisions on Insurance. — From a long line of decisions beginning with Paul *v.* Virginia, and including such important cases as Nathan *v.* Louisiana, Ducat *v.* Chicago, Liverpool Insurance Company *v.* Massachusetts, Philadelphia Fire Association *v.* New York, Hooper *v.* California, Noble *v.* Mitchell, New York Life Insurance Company *v.* Cravens, Nutting *v.* Massachusetts, Equitable Life Society Company *v.* Clements to the late cases of the New York Life Insurance Company *v.* Deer Lodge County, Montana, and the German-American Insurance Company *v.* Kansas, several points in the legal status of insurance have been incontrovertibly decided.

First, insurance is not commerce nor is the policy an instrumentality of commerce. It therefore is a subject for complete state control, subject only to such limitations as the Federal Constitution lays down for the control of any property.

Second, insurance has certain characteristics which make it a public business for purposes of rate control. A state can therefore regulate insurance rates to the same extent that it can regulate the rates of any business of a public character.

Third, the insurance contract is a personal contract, a mere indemnity for a consideration against the happening of some contingent event which may bring detriment to life or property. Its character is the same, no matter what the event insured against, whether fire or hurricane, acts of man, or acts of God, storms on

land or sea, death or lesser accidents. Nor does the character of the contracts change by their numbers or the residence of the parties. It is of course true that the ordinary life insurance contract is not peculiarly one of indemnity. It is also true that the courts of some states have refused to apply the fire insurance contract as one of indemnity.

Efforts to Secure Federal Regulation of Insurance. — Numerous efforts have been made to bring insurance under the regulation of the Federal Government. Elizur Wright, the first insurance commissioner of Massachusetts, made such a recommendation in 1865, and in 1866 a bill was introduced in Congress for this purpose. Several other bills for the same purpose have been introduced from time to time until it was finally recognized that such a law would in view of the decisions of the Supreme Court be unconstitutional. It is scarcely probable, in view of this court's decision, that Congress could make insurance interstate commerce by calling it such, for the court remarked in the early case of McCullough *v.* Maryland (4 Wheaton 316) " Should Congress under the pretext of executing its powers, pass laws for the accomplishment of objects not entrusted to the government, it would become the painful duty of this tribunal, should a case requiring such a decision come before it, to say that such an act was not the law of the land." The only hope, therefore, especially since the later decision of the Deer Lodge case, rests in securing an amendment to the Constitution which will bring insurance under the regulation of the Federal Government. Such an amendment was

proposed to Congress in 1914, but it has not yet received affirmative action. The advantages of federal regulation are among others:

Advantages of Federal Regulation of Insurance. — First, there would be one uniform code of regulation. Some uniformity in insurance control has been secured by the adoption by one state of another state's laws and through the conference of state insurance commissioners, but there is yet very great difference in the detail requirements.

Second, there would be one standard policy for each kind and class of insurance.

Third, one official examination.

Fourth, one uniform method of valuing policies.

Fifth, a marked decrease in the expense of regulating insurance.

Sixth, one uniform method of taxation, although the state would have a coördinate power of taxation, as in the case of railways.

The disadvantages, theoretical and practical, are, among others:

First, the danger of centralized political control. This, however, would not seem to be serious.

Second, the danger of control by the insurance officials through such a centralized bureau as compared with the opportunity at present of controlling them through the many state departments.

Third, the difficulty of securing the repeal or amendment of unwise legislation. If at present a company is dissatisfied with the laws of a particular state or the administrative regulations of the insurance commis-

sioner, it can withdraw from doing business in that state.

Fourth, the very great difficulty in prescribing regulation, especially as regards rates which would be applicable to the widely differing conditions in the different sections of a country so large as the United States. This would be more difficult in the case of fire than life insurance rates.

Fifth, the opposition that exists in some quarters of further centralizing control of business in the Federal Government at the expense of the states.

Sixth, the practical objection which the people of the states and their representatives in Congress would have in giving up such a lucrative source of revenue for the states by the loss of a part or all the revenue from the taxation of insurance companies.

The Basis of State Regulation. — Since the state is responsible for the existence of corporations, and since the rights granted to insurance corporations lead to the creation of trust funds, it follows that the state must see to it that these sacred obligations are met by the creature which it has called into existence — the corporation. At the time of the adoption of the Constitution and for many years later, the general principle of little government interference in industry was followed. Few evils, so far as insurance was concerned, resulted, for, as we have seen, little of insurance was transacted previous to 1835.

Character of Early Regulation. — Whatever supervision there was of the insurance business was at first primarily for the purpose of obtaining a basis for raising revenue,

and this, it may be added, is still an important reason for supervision. In the licensing of companies and the prevention of fraudulent companies from operating within a state, the interest of policyholders was probably of secondary importance. In time, however, as the business grew in size and complexity, there was a growing realization that the state must take a more active part in regulating a business which affected so large a number of people. In addition, there had been organized many companies of a fraudulent character between the years 1825 and 1850, or, if not fraudulent, organizations which operated upon the unscientific plan of assessmentism. The evils which resulted from the operation of these companies were probably the most direct cause for the demand to arise, that the business of insurance be more closely supervised by the state. Previous to 1855 the state had been satisfied to lay down in general laws the terms under which an insurance company could be organized and operated. No detailed reports were required to be filed and no reserves to be maintained.

Massachusetts was the first state to establish a state insurance department. This was done in 1855, and the action of Massachusetts was followed by New York in 1859, by Connecticut in 1865, by Ohio in 1867, and by Michigan in 1871. Every state in the Union now supervises the insurance business, although in some states the department is only a separate bureau under the direction of some other department of state. Where there is no separate department, the work is usually placed under the charge of the auditor, treasurer, or secretary of state.

The departments or bureaus are supported by fees and taxes collected from the insurance companies, but the amount of funds collected bears no definite relation to the cost of maintaining the department.

Although Massachusetts established her insurance department in 1855, no standards of solvency were required until 1861. No other state established such standards until after the Civil War.

How Insurance Is Regulated. — Insurance is, therefore, now regulated in the following manner:

(*a*) By the general laws governing all business so far as they apply in their general terms to insurance.

(*b*) By special laws, enacted to govern the organization, operation, and liquidation of insurance companies.

(*c*) By the establishment of the office of a commissioner or superintendent of insurance who is given in the laws of many states wide discretionary powers of an administrative character in addition to his special statutory powers of enforcing the insurance laws.

This Commissioner or Superintendent is in practically all cases an appointive official, that is, the office is a political one. The result is that the official frequently changes. During a period of fifteen years, ending with 1914, only two such officials continued in office. Frequently the appointed official has no special insurance knowledge which qualifies him for the office. Yet the results are not as serious as might at first be supposed. The department under his supervision has become in most states a large one with the subordinates in charge of its divisions well fitted by training and experience. These department heads often continue from commis-

sioner to commissioner's term of office and if the appointed commissioner is a man of good judgment, he soon becomes able with the aid of these subordinates to render good service to the insured public, the legislature, and the companies. Doubtless better results would be secured by longer tenure in office, since the commissioner is often replaced just at the time when he has become well informed and able to render directly better service, yet the actual results under the appointive system are not as serious as is sometimes argued. It does not follow by any means that "an insurance man" would make the best insurance commissioner for a state. The particular duties of the insurance commissioner cover a wide range of subjects.

There are in most states special laws which govern the organization of insurance companies. The terms under which such companies can be organized differ according to the character of the organization, such, for example, as the special laws governing the organization of a fraternal society or the ordinary level premium life insurance company. Since the latter companies do the greatest amount of the business and also are the ones to which regulation is chiefly directed, our description of the regulation of the organization and operation of life insurance companies may be taken as applicable to this kind of a company.

A very general requirement for such corporations is that they must deposit with the treasurer of state securities to the value at least of $100,000. This is a requirement for both stock and mutual companies proposing to insure lives on the level premium plan.

Massachusetts made this requirement of the New England Mutual, which was organized in 1835, twenty years before her state insurance department was established.

In some states there is a provision requiring the retirement of the stock of the proposed mutual company, with a maximum interest paid upon the funds which have been advanced by the incorporators of the company as a necessary capital to pay the large initial expenses of starting the company in business.

The laws governing the organizations of companies differ, of course, in the various states, but the general purpose in all cases is to lay down such principles as will insure the ability of the companies to meet their obligations.

The value of a deposit as a guarantee fund after the company is a going concern is very questionable, since the company is setting aside a reserve and probably a surplus. If the assets of a company are carefully inspected and the transactions of the company supervised, this would seem to give all the required safety, so far as solvency is concerned.

If a company organized in one state desires to do business in another state, it must comply with the conditions laid down by the state which it enters. Insurance is not commerce, according to the decision of the Supreme Court, and the various states may lay down in detail the conditions under which a company is permitted to do business. They must satisfy the authorities of the state that they are able to meet their obligations. A copy of the charter, granted by the

parent state, as well as a certificate showing that it is authorized to do business, is filed; also a statement of its financial condition showing income, disbursements, and a certificate showing that it has deposited with the officials of the home state a deposit, usually a minimum one of $100,000. It also files the valuation of its policies made by the insurance department of the home state and a copy of all the policies which it proposes to write. Its agents appointed or to be appointed must secure a license from the proper authority. Other information bearing upon the character of the company and its method of operation is secured by the proper state authority, usually the state insurance commissioner. If all this information seems to satisfy the state laws, the company is admitted by a certificate from the commissioner of insurance to do business in the state. The admitted company is then subject in its operation to the laws of the state on insurance. Some states intrust very large powers to the commissioner of insurance, while others lay down in detail the requirements for transacting the insurance business and require the commissioner to execute these laws with little discretionary powers. In either case the courts of the state can restrain the officials from violating the principles of equity.

Examinations of Insurance Companies. — In most states the certificate of the commissioner of insurance regarding the condition of the company is accepted in other states, but an examination of a foreign company can be made at any time, and such examinations, although not infrequent in the past, are becoming less

frequent. One of the most important committees of the National Association of Insurance Commissioners is the committee on examinations. This committee acts as a clearing house of information for the various state departments of insurance. It has already done away with some of the evils connected with the numerous and sometimes unnecessary examinations made by numerous states. The examinations made by this committee are accepted in many cases by the state departments, although, of course, any state has the right to conduct a separate examination. The examinations made by this committee and used by the various state departments do not refer to the annual examinations, but to those comprehensive examinations of a company's business which are made from time to time, especially when suspicion arises concerning the conduct of a company's affairs. Such examinations would naturally be of companies doing business in several states at the particular time.

Independent of these special examinations each state makes an examination of its own companies. In some states this examination is required every year; in other states every two or three years. This annual, biennial, or triennial examination by the state department ordinarily concerns itself with an examination of the transactions of the company during the preceding calendar year. The examiners take the last annual report and verify it. The items of income and disbursement are checked from the company's books. The assets are inspected; all mortgages are inspected as to title and their proportion to the value

of the property; the cash in office and banks is checked; and care is exercised to discover any weakness or any statutory violations of the investments. The liabilities must also be carefully investigated.

State Comity in Regulation Insurance. — The principle of state comity applies in many particulars, but it has far from accomplished complete uniformity. The National Association of Insurance Commissioners has done much in establishing uniformity in certain directions, such, for example, as providing uniform blanks upon which a company reports its condition to the insurance department. In many other cases, especially taxation, no uniformity is found. It is also generally true that home companies are favored over those of other states in one way and another. A favorite method is by a lower rate of taxation or no taxation at all on premium receipts.

Standards of Solvency. — The state has laid down certain standards of solvency by requiring the use of one of the accepted mortality tables, and the valuation of policies must be made according to that table with interest at a specified rate per cent. In determining the reserve liability of a life insurance company the state insurance department generally uses mean — or midyear — reserves on the assumption that policies issued uniformly throughout the year are all, on the average, issued July first of that year, and hence when the valuation of a company's policies is made, as of December thirty-first of any year, the policies are all at their midyear. The midyear or mean reserves are obtained by taking the half sum of the reserves at the beginning and

end of each year on the assumption that a full annual premium is paid on every policy. Consequently, deferred premiums to complete a full policy year are allowed in the assets. In industrial insurance the mean reserves just referred to are reduced by one half a net annual premium for a given kind and age, and deferred premiums are not allowed in the assets. On account of the heavy lapses in industrial insurance some reduction is usually made on first year reserves — about one half — and on second year reserves about one quarter.

In valuing assets certain rules are laid down for valuing stocks and bonds. The market value on December thirty-first has generally been used, but in some cases the amortization plan has been adopted, by which the values do not fluctuate with the market, but increase or decrease uniformly to par value so as to yield the same effective rate of interest throughout the period. Home office buildings and real estate owned by the company are valued by the local appraisers who know the value of the property.

Regulation as to Kinds of Business. — A requirement of many states is that a company is not permitted to write both participating and non-participating policies or, if both kinds are written, it is required that they be kept separate in the bookkeeping of the company. The tendency is for stock companies to write non-participating policies and mutual companies to write participating policies. It was urged that the evidence in the insurance investigation beginning in 1905 showed that in actual practice the equity of each kind of policyholders was not observed.

Dividend Distributions. — Annual distribution of dividends is a very general requirement. Standard provisions are required in all policies. These have to do with cash surrender values, options in settlement, loans, lapses, payment of premiums, and claims and many other subjects which are of general interest to all possessors of an insurance policy.

Regulation as to Investments. — The subject of investments is one upon which there has been a great amount of legislation. Not only has the state prohibited certain kinds of investments, as, for example, the permanent possession of real estate, but it has further limited them by specifying in what kind of securities the assets can be invested. This kind of regulation was adopted in many states before the establishment of the insurance departments, since the importance of having these funds securely invested was early recognized. The first restrictions were chiefly applicable to the original deposit, but by 1875 a number of states had restricted the investments of the general assets. At present the restrictions as to the character of the securities differ considerably in the different states. In all states investments in government bonds are permitted, although a few states limit the investment in bonds of other than the home state. Some confine mortgage loans to the home state of the company. Most of the states very carefully restrict the investments in corporation securities. New York prohibits all companies doing business in the state from investing in corporation stocks. Ohio follows the same practice. In the latter state, state and gov-

ernment bonds cannot be purchased when their market value is less than 80 per cent of their par value.

We may summarize the regulations regarding investments as follows as: (*a*) The tendency to prohibit investments in real estate except for Home Office Buildings is marked, but more liberality is found in regard to loans on real estate; (*b*) more liberal provisions regarding the investment in public securities and stricter regulations of the investments in corporation securities is the general rule.

Some states have shown a decided disposition to require a large amount of the reserve funds on policies to be invested in the securities of the state. So far as the legislation had for its purpose the protection of the funds by making possible a better knowledge of their actual value, there was some justification for the policy in the early days, when correct estimation of the value of securities could not be easily made. So far as the legislation has for its purpose the keeping of money within the state, it was more than questionable, for if the securities purchased must have a market made for them, this fact was at least presumptive evidence that these securities might not be desirable ones for an insurance company.

The purpose of regulating the investments of insurance has been to limit the investments to such securities as will bear the inspection of the public and guarantee the security of the funds. There are many who think that the restrictions are too severe and that a wide range of investments should be permitted under the

supervision of the insurance departments. But the element of risk is so frequently present in corporation securities and the public demand is so insistent, and rightly so, for security as the first test of an insurance investment, that notwithstanding the greater return to be often procured from corporation securities, there is no immediate prospect that the field of investments will be widely extended.

Certain regulations have been attempted in regard to the remuneration of officials and agents. Some states have established a maximum salary to be paid to the president and maximum commissions to agents, and especially the amount of renewal commissions to be paid, that is, the amount paid to the agent on premiums subsequent to the first.

Most of the states have laws prohibiting rebating, that is, the reduction by the agent to the purchaser of the first premium; in most cases the penalties imposed apply only to the agent giving the rebate. There is a tendency in some quarters to punish both the recipient and giver of a rebate. No company or its employees is permitted in most states to issue any estimate misrepresenting the terms of any policy issued by it or the benefits or advantages promised.

New York also established a limitation on the amount of new business which could be written in any one year. This limit is decreasing in its percentage with the increase in the amount of business on the books of the company. The New York law also limits the amount of the contingent reserve or surplus which can be held by a company.

Liquidation of Companies. — Some states have enacted laws which give to the commissioner of insurance the power of liquidating companies that have failed or have been ordered to close up their business, or when one company's business is being absorbed by another. This is done with the view of protecting the policyholders for reasons that are obvious at such times when there is a temptation for the officials of the company to benefit at the expense of policyholders.

In other states, laws have been passed which give the Commissioner the sole power of licensing agents and revoking licenses granted. This is done for the purpose of securing a high type of agent. This power becomes especially important when an agent is guilty of rebating.

The Commissioner in many states is given certain powers over unauthorized business and surplus insurance. In the first case he prevents and prosecutes companies from writing business in the state without a license, or prosecutes those seeking to secure insurance on their property from such "outside companies." In the second case he grants the privilege to agents or brokers or property holders to secure insurance from companies not regularly admitted in case they cannot secure sufficient insurance from "admitted companies."

Taxation of Insurance. — The subject of taxation is one to which the companies have most consistently and continuously objected. These objections are based upon two grounds: First, it is argued that insurance is not a proper source of revenue for the state, and second, that there is no uniformity in the tax in the differ-

ent states. It is argued that insurance is not productive; that it does not lead directly to the creation of wealth, but on the contrary aids greatly in the more equal distribution of wealth; that it is a fund set aside from income to care for those dependent upon the producer and thus relieves the state from supporting some, who otherwise would either become subject to their charity or would, through lack of adequate preparation, be inefficient producers and citizens; that the insurance policy is not a form of income-bearing property; that the premiums are a form of self-imposed tax.

It is urged that the policyholder must in the end bear the tax in the form of a higher premium, and thus the tax acts to discourage insurance by increasing its cost; that whatever of funds are collected from policyholders are so invested that they either bear a tax by their investment in real estate loans or aid the treasury of the state if they are invested in state or local government securities. At the farthest those who object to taxation of insurance receipts would permit only such a tax as would support the insurance department of the state, that is, an inspection tax or fee. The taxes are usually levied on the gross premium receipts derived from the policyholders in the state, but in addition there is found sometimes a state license tax, a charge for filing the annual statement, agent licenses, and city and county fees.

The home companies are frequently exempted from paying some of these taxes or are taxed at a lower rate than foreign companies. This practice does not often accomplish the purpose intended, that is, it does not

give preference to home companies, because most of the states have a retaliatory law which is automatic in its operation. That is, *X* state tends to tax the insurance companies of *Y* state at the highest rate levied by *Y* state on the insurance companies of *X* state.

The state tax on gross premiums, although in a few cases it is on the net receipts, varies from 1 per cent to 3 per cent. The amount collected by the states in the form of licenses, fees, fines, and taxes — excluding taxes on real estate owned — from ordinary life and industrial companies in 1914 was about thirteen million dollars. This was about 2 per cent of the total premium receipts of these companies during that year. It has been urged that the tax should be added to the premiums charged in each state and therefore assessed upon those policyholders whose state exacts the tax. Whatever theoretical justification this plan has as a matter of equity, it is practically impossible, since among other difficulties it would involve different rate books, policies, and reports for the different states, and add enormously to the bookkeeping work of the company and doubtless would be a violation of the antidiscrimination statutes of some states.

The reasons for the existence of the tax are not difficult to understand. The legislator in a democracy is constantly seeking revenue from sources from which objections will not be made. The large accumulations of funds by the insurance companies can be used without great popular objection. Notwithstanding that these funds are chiefly liabilities for obligations already incurred, they afford a ready source of revenue. The

real owners of these funds — the policyholders — do not even perceive the burdens, since they are very numerous and the amount borne by each is very small. The availability of the funds for taxation and the absence of any great popular objection to the tax would therefore seem to be the chief reason for the tax. It is easy to get and therefore is taken without much consideration of the equity of the taking.

Reasons Assigned for Taxing Insurance. — There are, however, those who argue that theoretical as well as practical grounds justify a tax on Insurance, especially in all those cases where the insurance organization is in the form of a stock corporation. Capital has been invested in these stocks by the owners with the expectation of deriving a dividend in the same manner that capital is invested in other shares of stock. The results actually secured both in the case of life and fire stock insurance companies have generally justified the expectation. It is true that many stock insurance companies have failed, just as many mutual companies have failed. But there are many examples of success.

The reply that even in this case there is double taxation is not sufficient, for as every elementary student of taxation knows there are many cases of double taxation justifiable both in theory and practice. Insurance taxation may be a tax on thrift and saving, but so is all taxation. The distinction should be made first between that saving or thrift which is incurred for productive purposes and for the benefit of the individual saving and that incurred for the benefit of those other than the person saving. In the second place a distinction should

be made between the number and character of those who benefit from the saving. If those of the insured group, that is, the policyholders, alone benefit from the saving of the individual members — the insured — and not second parties, such as the stockholders in a company, there would seem to be strong theoretical grounds to exempt these savings from any tax. The policyholders in a mutual company have banded themselves together to protect each other or their dependents against any existing risks. No one of the members expects to derive any special profit from the organization, and its benefits are open to any one who chooses to avail himself of it. If such organizations could be exempt from taxation as a distinct source of revenue for the state, these benefits would be granted its members at a lower cost. The state would be deprived of an easy source of revenue, but the ends of justice should always be of more importance to the state in its activities than matters of expediency.

So long as the stock company is a form of the insurance organization, it will be difficult to convince the legislator that insurance should be exempt from taxation. The tax is undoubtedly shifted to the policyholder in the form of a higher cost for his insurance.

The Annual Report. — The character of the annual report to a state may be indicated from the following items reported to the New York Department by a representative life insurance company.

1. Income and Disbursements; Assets and Liabilities in the form of a balance sheet beginning with the ledger assets of the previous year, and ending with

the gross assets as admitted by the Insurance Department.

2. An Exhibition of Policies, showing the number and amounts in force at the beginning and end of the year and the changes during the year. This is made for the State of New York on the basis of paid-for business only; for other states — as their laws require — either on a paid-for basis or an issued basis.

3. Business in the State of New York in brief — the copies going to other states containing an exhibit of the business in those states.

4. Gain and Loss Exhibit, showing actual expenses, interest and mortality in connection with legal allowances and office assumptions respectively; the profits from lapses and surrenders, gain and loss on investments, etc.

5. Premium Note account.

6. Schedule of cash and deposits of the Home Office with banks and trust companies in the United States and Canada; and cash with foreign banks, governments, and Branch Offices.

7. Special and General Deposit Schedules, showing in detail the securities deposited with the authorities of different states and countries in pursuance of legal requirements.

8. Real Estate Schedule, showing each parcel of property owned by the company, with particulars of cost, income, taxes, and improvements; also details of all purchases and sales made during the year.

9. Mortgage Schedule, with description, location, etc., of each piece of property mortgaged to the com-

pany; also an account of mortgage loans made, increased, reduced, discharged, or disposed of during the year; also showing the amount loaned in each state and foreign country.

10. Collateral Loan Exhibit, with similar information.

11. Bond Schedule, showing in detail the bonds owned, with book, par, and market values; date of purchase and from whom acquired, interest received, etc.; also separate schedules of all bonds acquired or disposed of during the year, with the profit or loss on each lot sold.

12. Schedule of Bank Balances, showing the largest balance carried in each bank and trust company in each month of the year.

13. Schedule of Contested Policies, showing name and residence of insured, amount of Policy, reason for contesting; also all settlements of contested cases made during the year.

14. Schedule of Salaries, Compensation, and Emoluments of all persons or corporations, to whom $5000 or over was paid during the year.

15. Schedule showing all salaries paid for agency supervision.

16. Schedule showing all commissions paid on loans or on purchase or sale of property during the year.

17. Schedule of Legal Expenses, showing amounts, to whom paid, and for what service rendered.

18. Schedule of Expenditures, in connection with matters before legislative bodies, officers, or departments of government.

19. Dividend Schedule, showing dividends paid under

all forms of policies in various years and for various ages; including explanations of the methods by which dividends were calculated on all classes of policies.

20. Schedule showing in detail all money expended in connection with the election of directors.

21. In addition to this printed form Policy Valuation Schedules are furnished, showing in groups, by kind of Policy, amount of insurance, age of insured, and years in force, the data necessary for making a complete valuation of its Policy liabilities.

Some specific phases of the regulation of fire insurance need to be emphasized. Much of what has been previously discussed refers both to life and fire insurance. The method of organizing a fire insurance company, the requirements as to the investment of their funds, and the valuation of the reserve have also been described. The solvency of the large fire insurance companies is no longer a subject of particular concern to the people. Most of the legislation referring to this phase of the business has long been on the statute books, and its results in operation have been on the whole satisfactory.

Fire Insurance Rates the Chief Subject of Regulation. — The one problem in the regulation of fire insurance which has occasioned most interest is that of rates. It is but one aspect of the widely prevalent disposition on the part of legislative bodies to regulate prices in the interest of consumers. In fire insurance the rating problem is technical and therefore difficult of understanding for the legislator and the public. The efforts to regulate such rates are recent and no general agree-

ment is found as to the best method to be used. The attempt to regulate rates arises from a desire both to protect the public from a supposed monopoly price and to secure equitable rates. The first desire has expressed itself in the numerous anti-combination laws, which usually have attempted to prevent the fire insurance companies from making agreements to determine rates, and to observe them in practice and to agree upon the commission to be paid agents; that is, there has been a popular belief that fire insurance companies were frequently guilty of monopolistic action with its attendant public injury.

Antitrust Legislation and Insurance. — In the last quarter of a century there has been manifested a great public opposition to monopolies and suspicion is always alert on this subject. The fire insurance companies were observed to agree in their rates in many cases, but on risks, apparently the same to the superficial observer, the rates would be different. The public, which was not informed as to all the elements entering into a rate, very naturally concluded that the charges were both monopolistic and discriminatory. Associations of fire underwriters which often made rates were numerous. At first such monopolistic-appearing organizations of the fire insurance companies were attacked under the common law. The courts in general refused to hold such associations or similar ones among the companies to agree upon, fix, and maintain rates as illegal in themselves to the extent that the persons were guilty of an act justifying a criminal or civil action. At most these agreements to fix, regulate, and control

the business of fire insurance were held to be unenforceable. If the restraint of trade which resulted was unreasonable in its effects upon the public interest, they could be dissolved. But few successful actions at law against such combinations under the common law principle of monopolies and combinations were had. When this common law principle had become expressed in the statutory antitrust laws of the various states, fire insurance organizations were attacked in the courts under these statutory laws. But when these laws were enacted, fire insurance organizations were not usually in the mind of the legislator as a monopoly to be thus regulated. It was common for these antitrust laws to refer in their terms to " merchandise and commodity " or similar business which did not include fire insurance. The courts very generally refused to interpret " trade," " merchandise," " commodity," and such words as including fire insurance. Since no relief adequate to the situation in the opinion of the public was to be had either from the common law or the antitrust laws, many states enacted specific anticompact or combination laws which applied specifically to fire insurance companies, although some states amended their antitrust laws to include specifically insurance companies. These laws have been upheld by the courts, since insurance has been held not only to be a public business but also not an interstate business within the meaning of the federal constitution.

Some of these laws are of a very stringent character, and only in a minority of the states is there a legal recognition of the fact that rates in fire insurance should be

coöperatively made instead of being competitively made. The history of competitive rate-making in fire insurance is so full of examples of public injury that there is little intelligent opinion on the subject which would argue for its continuance. The chief interest of the public as well as of the insurance companies is in the stability and solvency of insurance. To secure these ends and at the same time receive fair rates two methods of rate-making are open.

How Rates May Be Made. — First, the state may fix and approve minimum rates, trusting to the forces of competition among the companies to prevent unduly high rates. The greater part of the evils connected with fire insurance rates have not resulted from high or maximum rates but from low rates; that is, all the attendant evils of rate-cutting and discrimination. Minimum rates, therefore, in a system of rate-fixing by the state are more important than attempting to establish specific rates for each risk and class of property.

Second, the state may allow the companies to combine for the purpose of making and maintaining rates, and supervise carefully these acts of the companies. Both of these methods are in practice in the United States, although but a few states have attempted to fix rates. This second method often takes the form of legalizing rating bureaus, since these are the most economic agency for rate-making. These bureaus may be independent organizations or they may be composed of the representatives of the companies. The state through its department deals with the companies on the subject of rates through the bureau, and in some states these bureaus are becoming

quite as much an agency to represent the interests of the public as the companies; that is, they act continuously as a force to compel individual companies to observe rates and are more closely related to the work of the insurance department of the state than to the offices of the companies.

In some states neither of the above methods are used; that is, the state simply requires the company to file rates with a state official; or the state official may be given power to supervise rates only in certain particulars, such as seeing that rates are not discriminatory. At the present writing there is no uniformity in the regulation of fire insurance rates in the different states, although the tendency seems to be toward state supervision of rates rather than state rate-making. Probably no other one thing would so much improve the fire insurance business as the adoption by all states of a state system of supervising rates which would compel all companies to coöperate in making and maintaining rates.

Discrimination and State Regulation. — Discrimination, which has too often been prevalent, would be largely removed, at least in the particular state, by such a system. It will require, however, a farsighted and broad viewpoint on the part of the regulating official if discrimination is to be avoided as between states. Due allowance should be made in the rates of each state for the conflagration hazard. Again, the mere fact that property of a similar character in one state enjoys a particular rate does not prove that the same rate is a fair one in another state because, as has been shown, there

is a very wide difference in the burning rate in different states. This discrimination as regards states will probably be the most difficult problem in a system of state-supervised rates, since each state will think it is entitled to as low rates as any other state, just as the individual property owner or a village is disposed to think his or its rates should be as low as that of the neighboring property or village. Yet if the system of schedule rating is developed and the classified experience of companies is better collected and made public, there is hope of convincing both insured property owners and communities that the rates are fair. It has been too often the case in the past that neither the agent nor the company could give any satisfactory explanation to the property owner or the community for the difference in rates as compared with other property and communities.

Discrimination as to persons, as to property of the same kind, and as to communities and states has existed as an evil in fire insurance. The promise of its disappearance is in a system of combined experience, proper rating, enforced coöperation, and careful supervision by state officials.

No system of supervision will solve the problem of fire insurance rating in the sense that it is possible to determine what specific rates should be. Rates will continue to change with the varying conditions of building material, the construction and use of buildings, and the other fluctuating factors affecting the rates. But discrimination can be removed and equity as to classes of property secured. Finally, regulation of rates can do much to reduce the unnecessary fire loss by making

those responsible for it bear the large cost, which results from their carelessness.

It is doubtless true that much of the legislation enacted to govern the business of fire insurance has been unwise, but the explanation of its origin and character is not difficult, nor are the insurance companies to be held blameless as a cause of it. There are many points of similarity between the railway legislation and the fire insurance legislation. The high-handed methods of some of the earlier railway administrators, the evils of the rate wars, the discriminations, and a multitude of lesser evils produced in the public mind an attitude of hostility to all railways which only in recent times has shown any indication of abatement. There was a tendency, as is common in social action, to go to extremes, and along with the constructive legislation, laws were enacted detrimental both to the public and the railways. Many of the reforms forced upon the railways are of permanent value, as, for example, the uniform system of reporting expense, and as in many other instances, such uniformity would hardly have been adopted voluntarily by the different companies.

In a like manner the public bill of indictment against the fire insurance companies is not without foundation. In fact many of the counts in this bill of indictment will stand the test of a careful investigation. The forms and results which the competition among fire insurance companies has assumed often have been beyond the comprehension of the public mind. The public has not only witnessed the violent cutting of rates at the time of rate wars, but it has also experienced a considerable

variation of rates among the companies on the same risk in times of peace. It has observed that rates on apparently identical risks in the same locality, or in similar localities, have varied widely. This fluctuation in rates, now high, now low, now stable in the face of evident improved conditions, and unstable in the face of no changes, has caused the public to wonder if the fire insurance companies, collectively or individually, have any really scientific method of determining rates; whether, after all, rates are not a matter either of guesswork, or of charging what the traffic will bear; that is, the fire insurance companies were getting as much as they could, wherever they could.

Then, too, the apparently large expense of fire insurance companies has been a source of wonder to the public. Nor have the cases of over-insurance, careless inspection, and other attendant evils of excessive competition escaped public attention. When the companies have been called upon to explain and justify their acts, they have sometimes not been able to make an explanation satisfactory to the public, due partly to the fact that much of the explanation was technical, and partly to the fact that there was no satisfactory explanation to be made. The public itself is responsible for much of the difficulty. It has insisted upon competition in all respects and has paid the price for it. But when all allowance for the public's share in the situation is made, there remains a residuum of blame which must be borne by the companies. The chief source of this weakness is in the absence of standards in the fire insurance business. With the exception of a standard policy --

and it has many modifications — the fire insurance business has fewer standards than any business in the world. There is no standard for measuring hazards, no standard classifications, no standards of expense, no standards of accounting, and in fact no standards for doing a business, which, on account of its great complexity, is greatly in need of measuring units. The individual companies have been loath to join in coöperative movements to work out such standards, not primarily as they often assert because of fear of the law, but rather because the whole history of the business in the United States has placed a discount on such cooperation. It is very doubtful if this full coöperation, which alone will make possible a standardization of the business, will ever result except from public compulsion. The splendid work of the National Board of Fire Underwriters made an excellent beginning when it aided in the devising of a Standard Policy, and even greater results are now promised through the work of its Actuarial Bureau.

The only prospect that the marked tendency to enact more restrictive fire insurance laws will be checked is for the companies to work out in coöperation standards for the business. They must be able to explain more satisfactorily to the public how they make their rates, how they spend their receipts, how they classify the risks, what their losses are on classes of property and in different political divisions. The business of fire insurance is a public one, and its relations to public welfare are so vital, and to other businesses so important, that in time the public will insist that it be conducted

not only in the most careful and businesslike manner, but also that the methods be continuously open for public inspection and understanding. The courts have many times upheld the power of extreme control over the business of fire insurance, and public, or state, fire insurance promises no benefits which cannot better be secured by public control of the business under private ownership. Whatever reforms are needed can be best accomplished by the fire insurance companies themselves.

A greater degree of coöperation with the ends in view of restricting undesirable competition and of devising standards for the business is the great need of the fire insurance business.

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