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PROCEEDINGS

NOVEMBER 13, 1931

SOME RESPONSIBILITIES OF MEMBERSHIP

PRESIDENTIAL ADDRESS, THOMAS F. TARBELL

Periods in economic history such as we are now passing through stimulate reflection and introspection. It seems timely, therefore, that attention should be directed to some of the responsibilities of membership in our Society.

The object of our Society as set forth in Article II of the Constitution is:

> ". . . the promotion of casualty and social insurance by means of personal intercourse, the presentation and discussion of appropriate papers, the collection of a library and such other means as may be found desirable."

It is manifest that the full accomplishment of the object of the Society can only be attained by the appreciation and assumption of the responsibilities of membership implied in the above quotation.

The responsibilities of membership are both collective and individual. It is the latter class that I propose to consider. Such responsibilities fall roughly into four classes:

1. Attendance
2. Preparation and submission of papers
3. Discussion of papers
4. Participation in the informal oral discussions

Attendance—Attendance at meetings is a responsibility that a member owes not only to the Society but to his company, if he be a company man, and to himself. Our meetings should serve three purposes: an opportunity to meet friends whom we see infrequently, an opportunity to exchange, in off-moments, views and ideas with other members on subjects not on the program and, lastly, an opportunity to benefit by the subjects presented and discussed at the meetings. While our *Proceedings* contain a fairly

complete record of the formal matters presented at the meetings, they contain no record of the informal discussions of subjects of current interest, which have become one of the most important, most interesting and most instructive features. Only by attendance at meetings can a member expect to reap the full advantages of our Society.

Whether or not our meetings receive the support in attendance that the aims of our Society warrant is problematical, inasmuch as there is no entirely satisfactory standard of measurement. Nevertheless, it may be worth while to give some consideration to the attendance statistics. The number of members as of the dates of the annual meetings for the years 1926-1930 and the number of members attending the meetings with the resulting percentages are:

Date of Meeting	Number of Members	Number Attending Meeting	Attendance Percentage
November, 1926	268	59	22
" 1927	279	75	27
" 1928	287	71	25
" 1929	299	67	22
" 1930	304	67	22
AVERAGE	287	68	24

While attendance at the annual meetings for the past five years has averaged less than twenty-five per cent. of the membership, I do not construe this as an unsatisfactory record, especially when consideration is given to the fact that our membership does not possess the homogeneity of other actuarial societies. Our Society consists not only of casualty actuaries, but casualty executives and others not closely, and in some cases not even remotely, associated with actuarial work, and of a substantial proportion of life actuaries. This operates to reduce the "expected" attendance and I estimate that between forty and fifty per cent. of our membership falls within what might be termed the non-casualty actuarial group. Allowing for this, I find that our percentage of attendance compares favorably with that of other actuarial societies.

I desire, however, to call attention to the fact that while our average percentage of attendance is not unsatisfactory, there is an evident downward trend which should not appear in a society as young as ours, especially where the greater proportion of new members consists of those entering by examination. I am not

pessimistic on this particular situation, as I feel that if our other responsibilities are properly met the attendance problem will take care of itself.

Preparation and submission of papers—During the earlier years of my membership in the Society I submitted several papers which were accepted. These were prepared without solicitation and purely from a sense of responsibility as a member to participate in the activities of the Society, subject to the limitations of my ability. This sense of responsibility was probably enhanced by the fact that I had been admitted as an Associate without examination and shortly after attaining the Fellowship grade by examination was honored by election to the Council. Upon accepting appointment as Chairman of the Committee on Program in 1928, I was advised by my predecessor that the main function of my "job" was to get acceptable papers for the meetings and that it was a real assignment, since the voluntary submission of papers was a rare occurrence. You can imagine that I was rather surprised to learn that voluntary contributors of papers occupied an almost unique status in the Society.

I found during the two years of my service on the Committee on Program that the situation was exactly as stated by my predecessor. During this period the number of papers presented at the meetings by members as a result of spontaneous action constituted a very small proportion of the total. In the matter of preparing papers there was, and according to my latest information still is, a regrettable lack of that characteristic which, in lieu of a better term, may be designated as "self-starting."

I am not unmindful of the fact that there may be certain extenuating circumstances to which this lack of self-starting may be attributed. The membership of our Society is not, as previously mentioned, made up entirely of casualty actuaries. Further, many of those who were previously engaged in casualty actuarial work are now engaged in duties somewhat or entirely removed from the actuarial and statistical phases of the business. These conditions operate to restrict the number of members so situated as to be in a position to prepare acceptable papers. Also, the casualty business is not one of routine but is in a constant state of change. New problems arise almost daily and many of

our senior members find the demands of their company duties so exacting as to permit them little, if any, time for assembling material and writing papers.

This particular problem is not a new one. It has existed in our Society for some years. It probably exists or has existed in other scientific societies. In his presidential address at the June 5, 1925 meeting, Mr. Michelbacher in his general survey of the situation of our Society made the following remarks bearing upon this point:

> "Today our committees frequently have difficulty in obtaining enough papers to round out an adequate program. Papers are rarely submitted voluntarily; they must be solicited at the expense of considerable time and effort, and sometimes under sheer compulsion. This condition is not satisfactory. With the multitude of problems constantly arising in the field of casualty insurance, numerous papers should always be available from which the best could be chosen for presentation to the Society."

The situation complained of in 1925 has shown but slight improvement. It is, however, encouraging to note that two unsolicited papers were submitted and accepted for the May, 1931, meeting. Whether or not this marks the inauguration of a new era remains to be seen. This excellent example of spontaneity was not repeated, however, in connection with the present meeting.

The Society is still young. It has shown a healthy growth. Between November, 1925, and November, 1930, our membership increased from 256 to 304, a net increase of 48 members. During this five-year period there were 49 new members added by examination, 26 added by election and 27 withdrawals by death or resignation. The Society has contributed much to the advancement of the casualty insurance business but we have not attained a position, either in numbers or in accomplishments, which justifies any letting up in either individual or collective effort. The results of the casualty insurance business for the past few years challenge our energy, ingenuity and ability. Casualty actuaries may have been unjustly accused of responsibility for certain rate situations actually beyond their control. This is an added reason why we should increase our efforts to contribute to the solution of those problems of the business properly coming within the sphere of our influence.

I anticipate the objection that since many of the problems of the business, in particular rate making, are controlled or handled by various boards and bureaus, individual initiative is to some degree discouraged. The mere fact that direct participation in rate making is necessarily limited to comparatively few does not preclude the rest of our members from indirect participation. Our Society provides a forum through which the views and ideas of members not in the inner sanctum can be heard. Advantage should be taken of this by putting views and ideas in the form of papers and the discussion of papers presented by other members. One illustration of the efficacy of this procedure can be drawn from the field of automobile rate making. I am convinced that the paper on automobile rate making presented at the May, 1929, meeting and subsequent discussions have materially contributed to the advancement of scientific rate making for this major line of business.

The major problem of our Society today, as I see it and have emphasized in my preceding remarks, is the spontaneous submission of papers by our members, not only that we may be assured of a sufficient quota of papers of quality for each meeting, but, also, that we may contribute more and more to the advancement of the scientific phases of the casualty insurance business. I can add little to what has been previously offered as solutions to this problem by my predecessors, but for the purpose of emphasis it may be desirable to repeat or paraphrase sound counsel. We need to develop the faculty of self-starting. Those who have carried the burden of preparing papers in the past and have gladly acceded to urgent requests from the Chairman of the Committee on Program to prepare a paper at the eleventh hour, frequently at a material sacrifice of personal time, are entitled to consideration. They cannot reasonably be expected to carry on indefinitely. Other demands upon their time and energy are too great. The younger members must take the places of the veterans, not only in respect to this particular problem but on the Council, on the various committees, and as officers guiding and shaping the destinies of the Society.

Since our responsibilities for contributing to the success of our Society through the medium of submitting papers on appropriate subjects have been particularly emphasized, it appears to be in order to offer concrete suggestions. Accordingly, there is

appended a list of promising subjects, assembled from various sources, which may prove inspirational.

Discussion of Papers—Free exchange of ideas will unquestionably contribute materially to the solution of problems coming within our province. Our responsibility for participating in the discussion of papers is accordingly self-evident. It is a source of satisfaction to note the increasing participation in the discussions of papers. Here, however, as in the case of the preparation of papers, more spontaneous action would be a healthy sign.

Participation in the Informal Discussions—The enthusiastic response of our members to this comparatively recent feature of our meetings leaves, I am pleased to say, no basis for adverse criticism.

The attainment of membership in our Society should not be considered merely as an end in itself but as a means to an end—to play one's part in the affairs of the Society. Desire for self-advancement is a human characteristic and commendable if accompanied by a sense of fair play and due appreciation is given to agencies or vehicles contributing to such advancement. Our Society unquestionably serves as just such an agency or vehicle. Membership by examination gives the individual a professional standing of incalculable value. It is true that he, in most instances, has attained this standing by hard and conscientious work; nevertheless, it is the Society that has made it possible for him to prove his fitness and standing to the world. Is it unreasonable to expect that each member who has benefited by the existence of the Society in the past shall contribute, according to his ability and talents, to the perpetuation and advancement of the Society in the future?

In emphasizing the part that the younger members may be expected to play in the future, I am not unmindful of the fact that they have made a commendable record in the past. They have done excellent work on committees on which they have served and have presented a reasonable share of papers offered and accepted during recent years.

In conclusion: I feel that the responsibilities of membership call, in general, for a greater degree of spontaneous action and that an increasing share of the work of the Society, particularly the preparation and presentation of papers, must be borne by the

younger members. I do not recommend entirely shifting the burden from the shoulders of the older to the younger members. Those of the former who are in a position to do so and have contributed richly in the past should continue to give the Society the benefit of their experience and wisdom; those who are not so happily situated can be of great assistance in encouraging and counseling the younger members. The casualty business has, and no doubt will continue to have, many problems coming within our province. There is unlimited opportunity and plenty of work for all of us.

APPENDIX

List of Suggested Subjects for Papers

Accident and Health

Commercial accident and health experience.
Non-cancelable accident and health experience.
Group accident and health experience.

Compensation

Effect of serious cases on loss ratios.
Effect of changing economic conditions on loss ratios.
Cyclical variations in severity of accidents.
Experience rating—history, fundamental concepts and underlying theory, practical effects.
Indeterminate claim table.
Remarriage and mortality experience.
Tendency toward and effect of more liberal court interpretations of compensation acts.
Tendency toward and effect of more liberal court interpretations of contracts.
Distribution of loss payments by types of award and medical.

Automobile

Premium bases and classification of risks.
Effect of the tendency toward higher verdicts in liability cases.
Correlation of verdicts and policy limits in liability cases.
Variation in average costs by time elapsed since date of accident.

Miscellaneous

Effect of changing economic conditions on loss ratios.

State administration of insurance—a study of the different types of state administration.

Policy contracts—historical development and purpose of the general contracts and the important clauses.

Minimum premiums—historical development and the theory underlying minimum premiums.

Excess limits tables—laws and experience underlying.

Hazards in excess insurance—nature and measurement of hazards for various lines.

Premium bases—critical study of existing bases and suggested changes or modifications.

Excess insurance coverage—theory and rate formulae.

Stop loss insurance coverage—theory and rate formulae.

Comparative rate levels.

Analysis of 1930 census data in its relation to the casualty insurance business.

Accounting problems of multiple-line casualty insurance companies.

Analysis and distribution of expenses.

Relationship of the actuary and the underwriter.

Problems in the coordination of underwriting, claim and actuarial departments.

Investments and investment problems.

Pension systems:

(a) State old age relief and pensions.

(b) Staff pension plans.

Statistical reporting—critical analysis of various plans.

Statistical theory—studies of adequacy criteria.

Unemployment insurance or reserves.

THE CONTRACT OF PERSONAL ACCIDENT AND HEALTH INSURANCE

BY

STEWART M. LA MONT

I. The Evolution of the Contract

Accident and health insurance in practice comprises two separate forms of insurance and hence there are two separate contracts, (a) the accident contract, which insures against the effects of injuries caused by all or certain specified accidents, and (b) the health contract which insures against the effects of all or certain specified diseases or sicknesses. These may be issued as separate and independent contracts and often are. In fact, policies of accident insurance only are issued far more commonly than are policies of either health insurance or accident and health insurance combined. Formerly health policies were issued as independent contracts rather freely, but of late years health insurance is not generally granted except in combination with accident insurance.

In common practice, therefore, we find the accident policy and the accident and health policy—the latter being formed by merely inserting in the accident policy the additional clauses necessary to express the benefits payable on account of sickness from disease, thus practically incorporating two contracts in a single document.

The study of these two contracts is best approached with some knowledge of the history and development, or perhaps we may say the evolution, of policy drafting.

Formative Stage of the Accident Policy

In this country, accident insurance antedated health insurance by many years, so far as active prosecution as a commercial busi-

ness is concerned, and the earliest efforts at policy drafting were by men with no experience in the practical operation of the business, no data to guide them, no real knowledge of probable costs nor adequate appreciation of relative risks. They often worked under a great fear of unknown hazards and usually had limited financial resources with which to face untoward results. Moreover, while a few old-line companies, managed by trained insurance men, engaged in the business, the bulk of pioneering was done by many newly organized companies, associations, and so-called fraternal organizations, managed by men with little or no insurance training or background and drawn fresh from other businesses. Policy drafting, therefore, began as a process of experimentation by inexperienced men whose aim was to make attractive offerings to the public while safeguarding their companies against disaster from the uncertainties of a venture into an uncharted field. Above all, they saw dimly the fearsome elements of adverse selection, moral hazard and the machinations of the unscrupulous or predatory.

Early Exclusions of Coverage

The early fear of the unknown revealed itself in the many limitations put upon the scope of the insurance. A policy would purport to insure basically against accidental injuries but would contain a limiting provision excluding, for example, injuries due to voluntary exposure to danger; contributory negligence; violation of law, or of the rules of any corporation; walking or being on a railroad bridge or roadbed; inhaling gas; poison or anything accidentally or otherwise taken, administered, absorbed or inhaled; lifting; over-exertion; fighting; wrestling; playing football or polo; bicycling; sunstroke or freezing; getting on or off of conveyances; riding on the platform of a car; or injuries intentionally inflicted by another, or sustained while under the influence of intoxicants, or while failing to exercise due care and diligence; or injuries of which there should be no external mark, the body itself not to be deemed such mark; or injuries due partly or wholly to fits, vertigo, somnambulism, or disease or infirmity of any kind.

All policies did not contain all of these protective conditions though in early days they were pretty generously employed upon the theory that the insurance should be confined to those accidents that might be classed practically as acts of God, uninfluenced by human fault, responsibility or cooperation. And from time to time, as losses were incurred from unanticipated causes, or when companies were confronted with doubtful or unfair claims, new conditions would be devised for protection against possible repetition.

In those days business of all kinds was commonly conducted with strict regard for technical rights and contract obligations. It was not out of line with prevailing business practice that these conditions should be enforced to the fullest extent that they gave refuge to the companies and with little thought of idealistic considerations or a spirit of service. And so these conditions were generally enforced, as also were others of a more technical character, such as those relating to the giving of notice, filing of proofs, exactly truthful warranties, etc. There was a period, too, when insufficient financial resources, inadequate or uncertain premium rates, ignorance of the business, of the law, of what did or should properly constitute a legitimate accident risk, or what obligations were or should be assumed under the contract as written, led to resistance of claims upon unreasonable grounds, untenable theories and specious reasonings. There were some judicial decisions in favor of companies which would be regarded today as at least surprising if not inconceivable. These successes by the companies doubtless encouraged defenses even less justifiable and the non-success of which soiled the pages of accident insurance history and helped to bring about a revulsion of judicial attitude and a swing of the judicial pendulum rather far in the opposite direction.

There was a good deal of litigation in the early days and the courts in those times were prone to deal with technicalities without regard to the merit behind the cause. These practices soon produced a record of which present day administrators of accident insurance would not be proud. Nor does that record reflect either the terms or conditions of present day policies, or the ideals and methods of present day administration. But accident insurance of today is not yet wholly freed of the onus for methods

and practices of other times. Court records of forty or fifty years ago are still available, still cited in cases of far different character, still used to suggest an attitude and a practice that no longer exist and still influence judicial minds against really meritorious defenses.

Development of the Accident Policy

Insurance men first guessed, then studied and finally learned in the hard school of experience how to put the business on a sound footing and to alter its whole theory and practice. Knowledge of costs was gained, methods of underwriting selection were devised, the way was charted and confidence replaced fear. Policies generally were cleared of the old exceptions and few now remain that attempt to exclude anything that may be fairly and reasonably regarded as an injury and its cause an accident. The standard accident policy of today usually aims to furnish effective accident insurance, the most of it possible at the least possible cost and under terms and conditions as fair to the insured as can be devised with reasonable precaution against fraud and imposition. The companies today are criticized chiefly for overextending the policy coverage, for giving too much for too little, for too greatly risking their resources in what is by some termed a mad scramble for business, by others regarded as healthy competition and by still others as the natural growth of the spirit of service in a business only lately out of its swaddling clothes and a bit overcome with youthful enthusiasm. It is true that some policies still are issued that contain rather numerous restrictions, and others that limit their coverage to special or particular hazards, but they are exceptional and do not represent common practice.

Thus, in studying the accident policy of today, it must be borne in mind that evolutionary experimental developments, the court records of the past, the judicial decisions even under policies of a different sort, the legal interpretations of words and phrases, still have an important part in influencing the drafting of the contract. While it may seem a simple matter for one to say plainly and in few words exactly what one means, those same words may be susceptible of surprisingly different understanding

in the mind of another who reads the words without knowledge of the thought behind them. Or, mayhap, another may choose to twist the words to his own advantage though fully conscious of the policy draftsman's intent.

The chief problem in contract drafting, therefore, is to find means of expressing surely the true intent of the contract. The contract should mean what it is intended to mean and yet be proof against distortion into an undertaking far more extended than is contemplated by the insurer or paid for by the insured. The perfect policy will be one that the insurer and the insured will always read alike and as a final test will always be read the same by the courts. There are no perfect policies. The approach to perfection is a continuous one of approximation, characterized by discovery and correction of faults or weaknesses, by changes in the light of new decisions by the courts or new experience of the business.

The evolution of the accident policy is marked also by ready response to public need and by accommodation to changing conditions of life. Its scope has been continuously extended by removing restrictions and by adding new benefit provisions. To the early provisions for quick death and total disability for a limited period there were added provisions for loss of limb and sight, double insurance against accidents of travel, partial disability, removal of the period limit for total disability, payment for death or dismemberment occurring after long intervals of time, with payment of disability benefit during those intervals. Then there came a period of indulgence in the so-called "frills," providing extra payments for surgical operations, hospital confinement, nursing service, medical treatment of non-disabling injuries, so-called identification, the extension of the double benefit provision to include accidents not incident to travel but selected for rarity. Then came the inclusion of a limited form of travel insurance for the beneficiary and finally for the children of the family. Ingenuity in the selection of window dressing features, of which the premium costs were incalculable separately and often assumed to be equally costless collectively, somewhat replaced considerations of service value. Some of these excrescences have been removed and probably the future will see the accident policy restored fully to its normal functions.

Formative Stage of the Health Policy

The past career of the health policy is more brief and less checkered. From its inception it was in the hands of men of experience, qualified as underwriters and actuated by a desire to render service. Under their guidance accident insurance had been elevated to a plane of dignity and quality; strong, ably officered and well managed life and casualty companies had become its leaders; the accident policy had become a contract proudly advertised as containing "no exceptions"; the business was growing apace in volume, prestige and public favor and its extension into the field of health insurance was a natural and logical step. It was again a new field, however. Knowledge of costs was lacking, applicability of experience in other countries was doubtful and, even with the training, courage and vision acquired in the closely kindred line of accident insurance, cautious experimentation was deemed the better part of valor.

Prior to 1897 such health insurance as had been attempted had been issued by mutual benefit associations, generally short lived and of dubious responsibility, operating under varying and often peculiar conditions. Their experience was neither available nor suitable as a standard for commercial operations. These were to be another pioneer undertaking.

The first offering by a responsible, old-line company was in the form of a supplement to the accident policy and it insured only against eight or ten diseases specifically named. Later the list was extended to cover seventeen, twenty, twenty-four and more diseases. But always there was careful selection of diseases to be covered, a few of common occurrence being included among a much greater number of rarest incidence, of non-disabling nature, some children's diseases, some unknown in this country, some trifling blemishes dressed up in imposing Latin designations and running the gamut from Asiatic cholera to a pimple on the ear. This method of gaining experience soon proved both unsatisfactory and illusory. The public did not understand medical Latin, complained of being misled into believing health insurance insured against sickness, only too often to find, when sick, that "the policy did not cover." Efforts to "beat the game" followed and, with the cooperation of sympathetic doctors, diagnoses came to be influenced by the necessities of the list contained in the policy

more than by the tenets of medical science. Bronchitis, included in the list, covered a multitude of ills; typhoid fever cohabited with many strange clinical bedfellows. There were many disputed claims and many were paid that never were contemplated by the policy. Soon the companies found that they were losing not only friends and prestige but money also.

Development of the Health Policy

Within a few years followed the bolder step of insuring generally against sickness but limiting payment to the period of house confinement. The business was vigorously prosecuted and, under pressure of keen competition, the policy coverage was quickly extended even before the adequacy of premiums was fairly tested. The house confinement restriction was eliminated, provision for partial disability was added and soon there were further provisions for surgical operations, hospital confinement, nursing charges, quarantine detention, principal sum payments for blindness and paralysis. By this time the spirit of service had developed health insurance into a most complete form of protection. It also opened the door to the malingerer, the vacationer, the imposter. Progress ran ahead of experience, constant changes of policies and practice kept statistical data in a state of flux. Presently premiums were found insufficient to carry the whole load and during recent years various corrective measures have been tried, such as increasing premiums, reducing commissions, eliminating benefit provisions most abused, introducing waiting periods, restoring the house confinement clause, selecting risks more rigidly at issue and by re-selection after experience. There was, however, no uniformity of action and the best means of achieving permanent stabilization have not yet been determined, in respect either to policy coverage or to premium rates.

As a general rule health policies have always fixed a period limit of disability coverage, usually twenty-six weeks in earlier days, then generally extended to fifty-two weeks and with occasional experiments with longer periods. A few companies essayed the "life indemnity" form, with benefit payable during continuance of disability without limit, but though these forms were

issued at higher premiums and to specially selected risks, they seemed to accentuate all known difficulties. Experience under them was usually found prohibitive and they have been pretty generally abandoned. The most recent development is, of course, the non-cancellable policy, which must be regarded as of a different type altogether, limited in its operation to a particular class, operated by a few companies and abandoned by others and still in an experimental stage. This form has generally included the "life indemnity" feature but lately there is a tendency to substitute a form of period limitation known as the "aggregate indemnity" provision. It is usually issued with lengthy waiting periods and is mainly designed to cover only the more serious cases of prolonged disability. The drafting of this form of policy involves problems peculiar to itself, the solution of which probably awaits the development of experience.

The history of the accident and health policy thus presents a kaleidoscopic picture, the shifting views of which must be ever in the mind of one who designs a policy, one who interprets it and one who studies it.

II. The Present Day Contract

The stock in trade of accident and health policies is of great variety under widely diversified forms and this is especially true of accident policies.

The accident policy does not insure merely against a single contingency and promise a certain benefit therefor, as does nearly every other form of insurance policy, but insures against a multitude of events, with a variety of benefits. Such a policy offers a field for almost infinite variation, both as to events to be insured against and as to benefits payable for each. It may insure against all accidents and yet may vary the benefits payable for accidents of particular causation or the amounts payable for particular results. Likewise it may insure not against all accidents but against only a selected few of specified causation; or it may insure against all results of accidents covered or only particular results of specified character; or it may insure against

a majority of accidents and exclude a certain number or class. Thus, with the multitude of causative events and the variety of ensuing results there is practically no limit upon the possible variations except the limits of imaginative fecundity, or the aims, ideals and business policies of the many different companies.

The health policy approaches more nearly to the idea of insuring against a single event, that is, sickness due to disease, but still it is susceptible to many variations in amounts payable for particular results, or according to various circumstances attending the sickness, and the variety of policies probably equals the extent of the opportunity.

Synopsis of Present Day Contracts. Ten Basic Plans

A general synopsis of the various types of policies to be found upon the market would classify them about as follows:

1. The *general accident policy,* insuring against all accidents.

2. The *general accident and health policy,* insuring against all accidents and sicknesses.

3. The *non-cancellable accident and health policy,* insuring against all accidents and sicknesses with right of renewal vested in the insured up to a specified age. This form is issued by a small number of companies and subject to exceedingly careful selection.

4. The *restricted accident policy,* insuring against accidents in general but excluding those of certain kinds specified in greater or less number and omitting certain benefit provisions common to the general accident policy. This form is mostly favored by mutual and fraternal associations which aim to furnish insurance at lower rates than those prevailing among old line companies and consequently seek to confine the scope of the coverage within the limits permitted at a popular price.

5. The *limited accident policy,* insuring against specified accidents only, which may be confined to a single causative factor, such as railroad accidents or even train wrecks, or automobile accidents, or it may include a certain class of accidents regulated in scope by the premium fixed upon, which may be a dollar or a few dollars. Or the policy may be given away with a newspaper subscription or a pound of tea and its insurance value is neces-

sarily in proportion. Few companies issue them, because of their small service value, though the form covering automobile accidents receives the approval of a somewhat larger number.

6. The *limited health policy,* insuring against specified diseases only, which may be selected with the purpose of furnishing little or more insurance in proportion to the premium to be charged. This form is in the same category with the limited accident policy, is often combined with it and is issued by still fewer companies.

7. The *group accident policy,* insuring a large number of persons under a blanket form and without individual selection (generally employees of an establishment or other groups formed for purposes other than insurance) and usually confining the coverage to the major losses of life, limb or sight.

8. The *group health policy,* issued to similar aggregations, and usually covering disability only, whether due to accident or disease; this form may cover occupational accidents but more commonly excludes this risk and thus becomes a supplement to workmen's compensation.

9. The *double indemnity supplement of the life insurance policy,* insuring additionally against death due to accidental injury. This is nothing but straight accident insurance, though issued by life insurance companies that may not be dealing otherwise in accident insurance or issuing it in more complete form.

10. The *disability annuity supplement of the life insurance policy,* insuring against total disability, presumably permanent, and whether due to injury or disease. This is accident and health insurance of non-cancellable form with exclusion of a certain period of disability and limited in amount by life insurance issued concurrently.

Superimposed upon these general types of policies are a number of variants in substance.

III. Variants in General Types of Contracts

Waiting or Exclusion Periods

One of these variants is the exclusion period, or waiting period which provides that no benefit shall be payable for the beginning days or weeks of any disability. Formerly this was rarely in-

cluded in general accident or health policies but more recently is being adopted to some extent in both, but especially as to health insurance. The aim is to keep down the premium, reduce the operating cost and limit the moral hazard; the exclusion may vary from a few days to many weeks. The waiting period is commonly found in the non-cancellable policy, usually varying from a month to three months, though occasional shorter periods are used. The waiting period has in fact become almost universal in non-cancellable forms and with the longer exclusion periods most favored. It is nearly always found in group health policies but usually the period is short, mostly a week, sometimes less, seldom more. It is the rule in disability annuity provisions, varying a good deal in both period and terms, the shortest period being three months; in some cases, benefit may be payable from the beginning of disability, or from the end of the exclusion period, or payment may be conditioned upon proof of probable permanency after the expiration of that period; sometimes the exclusion period is longer and sometimes benefit is payable only after another waiting period following the filing of proof.

Period Limits for Disability Benefits

Another variant is the period limit for which disability benefit is payable. General accident policies are freely issued with no such limitation, though one is usually found in any restricted or limited form. General health policies usually limit the period to fifty-two weeks, but with occasional shorter or longer periods. Non-cancellable policies have been commonly issued without limitation but more recently an equivalent has been introduced in some in the form of a limitation of the aggregate amount of benefit collectible during the life of the policy. Group health policies are subject to variable period limits, such as thirteen, twenty-six, or fifty-two weeks, dependent upon the agreement in each case. Disability annuity supplements of course contain no limitation, as their whole purpose is to provide for permanent disability.

Another variant is the house confinement provision, which may be found at times in respect to health insurance and which undertakes to establish continuous confinement as a test of sickness

sufficiently serious to justify recognition as a total disability and payment of benefit is accordingly so conditioned.

It is apparent from the foregoing that accident and health insurance covers a wide field of usefulness and finds unlimited opportunity for public service, that it is adaptable in many forms to many needs and that in its every function different problems must be dealt with and different contracts must be constructed.

As a rule, however, accident and health insurance is identified chiefly with the separate contracts issued to individuals and of these there is a vast multiplicity of forms. The fundamentals of the various general accident policies are substantially the same, that is, they provide principal sum payments for death or dismemberment and weekly benefits for total and partial disability. The groundwork of the general health policy is the simple provision for weekly benefit for disability. But differences in minor features are many and varied, each company following its own bent in selecting or devising selling points or adopting others to meet competition. And so, new policies are continually being produced, little changes are constantly made and some companies maintain an equipment of scores of slightly differing forms from which agents or public may choose. It would serve no purpose to discuss in detail the ever-changing draperies with which the main structure of an ordinary accident or accident and health policy may be variously festooned according to taste. It may suffice to say that these variants are only inconsequential excrescences upon the body of a useful servant and at least do not detract from, if they do not add to, its service value. They seemingly promote at times the selling of accident and health insurance by their appeal to the human craving for novelty.

IV. Sources of Information on Policy Provisions

A publication by the National Underwriter Company of Cincinnati, Ohio, under the title of *The Time Saver,* revised and issued annually, and another under the title of *Policy Analysis,* in loose-leaf form with monthly changes and corrections, undertake to furnish, with a certain uniformity of arrangement, outlines of the various policies currently issued by different companies, setting forth benefits, special features and general condi-

tions and premium rates. A similar one of identical scope but different arrangement is published by the Alfred M. Best Co. Inc., of New York, under the title of *Best's Accident and Health Analyses*. Another publication by the Spectator Company of New York, under the title of *Accident Insurance Manual*, aims to serve the same purpose in the somewhat different form of a narrative description of the benefit provisions of the various policies, with their respective rate tables. While not wholly complete as to all forms, these publications include the policies principally advocated by the principal companies; the issues of from fifty to ninety different companies are dealt with and each company is represented by anywhere from three to twenty or more different forms. A review of one recent edition shows more than eight hundred policies offered by some ninety companies and there are many others not included because not deemed sufficiently active on the market to justify publication.

Then there is the plethora of limited policies. Though issued by few companies, their number and variety are usually regulated only by the particular ideas of the particular agency or instrumentality through which they are to be sold. They are not commonly sold by direct canvass of individual agents but mostly through special advertising, mail orders, etc.; often they form a part of a newspaper campaign for increased circulation and one newspaper may offer ten thousand dollars of accident insurance while another at the same time for the same price, one dollar, offers one thousand dollars of accident insurance, in connection with a subscription to the newspaper. Insurance "stunting" of this type seems to be more popular in Europe than in the United States.* Other limited policies may sell at five dollars or ten dollars and may include sicknesses as well as accidents in their coverage, but in all cases the selection of particular accidents and sicknesses to be covered is in proportion to the price. These forms of policies, while necessarily included as a part of the business of accident and health insurance, are to be recognized as a separate and passing phase wholly without relation to the main function of such insurance. They are condemned by some and

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* *See: Manes, Alfred. Versicherungswesen.* Vol. I, pp. 5 and 221. Leipzig. Teubner. 1930; and *Carl Casper Speckner. Das Recht der Abonnentenversicherung.* Erlangen. 1930.

defended by others. Certain it is that great numbers of them are sold, especially when cleverly advertised, because in these days people give up a dollar with little thought. In the nature of things many must pay the dollar where one may receive benefit.

V. Constituents of the Contract

An insurance policy is composed of six constituent parts—(1) the insuring clause, which exactly specifies the general scope of coverage (2) defining or limiting provisions, where such are necessary to clarify the general terms, to confine interpretation within intended limits, or to exclude particular risks if any are to be excepted from the general undertaking (3) benefit provisions, which fix amounts payable under the several contingencies insured against and prescribe particular conditions applicable to each (4) the consideration clause, which states specifically the money and other considerations necessary to the validation of the contract (5) the copy of the application, which is a component part of the contract (6) general conditions of performance, which pertain to the effectiveness and continuance of the insurance and the rights and obligations of the parties in the various circumstances that may arise in course of operation.

VI. The Insuring Clause

Standard Accident Clause

Dealing with policies designed to furnish the most complete form of protection and which, for want of an established generic term, we may designate as "standard" because most commonly issued and generally regarded as the best type, we find some minor variations in phraseology of the insuring clause as used by different companies, but with substantially identical intent and scope. A typical insuring clause reads as follows:

> "The company hereby insures John Brown, by occupation lawyer, classified Select, for the term of twelve months from May 1, 1931, noon, standard time at the place where the

insured resides, and subject to the provisions and limitations herein contained, in the

Principal Sum of Five Thousand Dollars
Weekly Indemnity of Twenty-five Dollars

against the results of bodily injuries sustained while this policy is in force and caused directly and independently of all other causes by violent and accidental means."

Standard Accident and Health Clause

The foregoing represents the insuring clause of a policy of accident insurance only, while for purposes of combined accident and health insurance the clause would be changed, beginning with the word "against" to read as follows:

"against (a) the results of bodily injuries sustained while this policy is in force and caused directly and independently of all other causes by violent and accidental means and (b) the results of disease or sickness contracted while this policy is in force."

Death and Dismemberment Clause

For a form of accident policy, known as the "death and dismemberment" form, sometimes issued to those who are not employed in any regular occupation or business and therefore are not eligible for insurance against occupational disability, or those who for other reasons elect to insure only against the major losses of life, limb, or sight, the specifications of the insuring clause merely omit reference to any weekly indemnity and thus it becomes suitable, with the benefit provisions correspondingly constructed. Likewise, for a form sometimes issued and designed to insure only against disability and not against death, the insuring clause is suitably adjusted by omitting reference to any principal sum.

Limited Accident Insurance

For a form of limited accident insurance designed to cover only specifically named accidents, such as those occurring in public conveyances, or in automobiles, or other selected risks, the specification of particular risks to be insured against is sometimes added to the usual insuring clause and sometimes reserved for

inclusion in the benefit provisions. Likewise, for a form of limited health insurance, designed to cover only specifically named diseases, either of the same methods may be followed.

External, Violent and Accidental Means

The function of an accident policy, stated in its simplest terms, is to insure against the effects of accidental injuries, but the problem of so expressing that intent as to stand the many tests to which it may be subjected, gives rise to differences of opinion among authorities and results in a number of variants. In some policies the specification of the moving cause of the injury is "external, violent and accidental means," the aim being to establish the agency as one originating in an external source as well as operating independently of the insured's volition and involving a violent action sufficient to cause physical injury; this, indeed, was the original theory of design. In others the word "external" has been omitted in the belief that it added nothing to the descriptive quality of the phrase and seldom received consideration in the process of legal interpretation. In still others, both of the words "external and violent" were omitted on similar reasoning and with the idea of simplification.

But the theory that these words were merely redundant, in the light of previous judicial decisions, was somewhat shaken by later rulings apparently influenced by legal presumptions that different wording implied different intent and justified distinguishment from earlier decisions founded on the more carefully worded terms. In consequence some companies have restored both words and some have restored only the word "violent" as the more indicative of definite intent. In a few instances the term "accidental bodily injuries" has been substituted for "bodily injuries caused by accidental means," but whether this new expression is more definite of intent, or shall prove to import any different significance, remains to be determined; other efforts have been made to rephrase the clause so as to harmonize the expression of intent with the many legal interpretations, often seemingly inconsistent one with another, sometimes doing violence to the plain meaning of words used and not infrequently most confusing. One such effort uses the phrase "personal bodily injury which is effected solely and independently of all

other causes by the happening of a purely accidental event." Another effort, resulting from study and collaboration under the auspices of the Health and Accident Underwriters Conference, suggests use of the term "accidental injury without contributing causes" supported by a secondary defining clause to the effect that "accidental injury as used in this policy means bodily injury suffered while this policy is in force and which is effected solely and independently of all other causes through accidental means."

The thought has been expressed by some that, in view of the difficulty in procuring any fixed and uniform judicial interpretation, applicable equally to many varying sets of circumstances and reconcilable with other decisions of the past, the wisest course would be to abandon completely the phraseology hitherto relied upon and to substitute some entirely new clause. But even that method confronts the companies with the possible necessity of engaging in much undesired and costly litigation in order to secure such interpretations in the many jurisdictions as may satisfy lawyers who in absence of exactly fitting decisions may be led to embark in experimental actions. Others hold the view that most by far of existing decisions are reasonably reconcilable with a fair interpretation of the true intent of the present wording.

The Intent of the Insuring Clause

The accident policy at its best is necessarily a form of limited insurance. It insures against death but not all deaths; it insures against disability but not all disabilities. If it undertakes or is construed to cover death and disability due to disease it becomes life and health insurance as well as accident insurance—and must disappear as impossible to operate. In order, therefore, to preserve it to its undoubtedly useful place in the scheme of public service, where it may furnish large protection at small cost against the results of definite injuries actually sustained and caused by truly accidental events, *and those only,* it is highly essential that it be carefully constructed to make its legitimate limitations specific and clear. And when that is done the contract is entitled to be respected for what it is by every insured and by every court.

The thing the accident policy insures against is the effect of a bodily *injury* which, in its common and ordinary acceptance and meaning, connotes a hurt, a mechanical damage to the body structure, as distinguished from disease or the physical changes naturally brought about by the ordinary processes of disease, degeneration or disintegration. In the absence of this distinction there ceases to be any difference between disease and injury, between the orderly development of natural processes and the *violent* interposition of fortuitous *events*. And such an injury must be immediately and definitely recognizable as the direct result of some violent force sufficient of itself to cause damage to a substantially normal body structure. An accident is an *event*, something that happens that is unintended, unforeseen and unexpected by the person it happens to and that *by its happening produces the force that causes the injury*. Summed up, then, there must be a series of occurrences—first, an accident must happen, second, that accident must set violence in motion and, third, that violence must cause bodily injury, without other concurring causes or cooperating conditions.

Accidental Means and Means Not Accidental

But often there is confusion in the minds of policyholders, attorneys and courts (sometimes from faulty reasoning, sometimes from wrongheadedness, sometimes from prejudice or cupidity, sometimes from determination to revamp a contract to meet a need after the event) *between accidental means causing injuries and unlooked for results of means not accidental*, between effects actually due and conditions merely subsequent to an accident, between an *injury* and a *disease*, between a sudden violent force causing immediate damage to the body and the normal contraction of disease and its usual progress to an ultimate disfunction. Not infrequently attorneys representing the companies have betrayed such inadequate conception of these distinctions that they have failed to present the true questions that should be at issue or to set them out with sufficient clarity. Occasionally courts entirely disregard the actual terms of the contract, though plain and unambiguous, and substitute some judicial conception of what the agreement ought to have been in order to cover an existing situation and, to support an opinion, indulge in irrele-

vant dicta which later are cited and given the force of principles of law by other courts. And so the problem has grown until the adequacy of the English language to the expression of thought and the freedom of parties to make a specific contract often appear at least doubtful.

Missouri Suicide Cases

As long as thirty years ago very able lawyers went before the Missouri Supreme Court admitting that suicide was death from external, violent and accidental means (Logan vs. Casualty Company, (1898) 146 Mo. 144) and years later others contested suicide cases in that state without raising the fundamental point that an intentional act is not accidental (Whitfield vs. Ins. Co. (1903) 205 U. S. 489; Applegate vs. Ins. Co. (Mo. 1910) 132 S. W. 2). Then, after twenty years the Missouri Supreme Court blandly remarked that it never had held that suicide of a sane person was an accidental death and appeared mildly astonished that companies, counsel, courts of that state and the United States Supreme Court should have mistakenly assumed such to be the import of its decisions (Scales vs. Ins. Co. (Mo. 1919) 212 S. W. 8). And the same court was required to and did reaffirm that principle, despite a delightful theory quoted in the opinion that "even in these days when the leaven of reform is working in all the law and the strife is toward a legal millennium whereat every man shall be his own lawyer" (Brunswick vs. Ins. Co. (1919) 213 S. W. 45). Again in the following year (Bayha vs. Casualty Co. (1920) 217 S. W. 269) and yet again before its seriousness was accepted (Tillotson vs. Ins. Co. (1924) 263 S. W. 819). But for twenty years the companies were wrongfully under judicial compulsion to recognize deliberate self-destruction as an accident in Missouri—until the courts righted themselves.

Sunstroke

A similarly anomalous situation existed for a period of years in respect to sunstroke, clearly a condition of disease not due to an accidental injury and in earlier days specifically excluded from coverage. But one insured objected to that exclusion and the word was stricken from the policy, though without other change

in its expressed undertaking, and when the insured died of sunstroke the company was held liable on the theory of doubt as to the intent involved in this alteration and the preliminary negotiation was deemed to be indicative of that intent, thus illustrating the danger of opening the way for construction of the contract out of material other than its content (Mather vs. Ins. Co. (Minn. 1914) 145 N. W. 963). Later policies specifically agreed to cover sunstroke *if due to violent and accidental means* and in two cases this was held not to apply to sunstroke occurring in the course of ordinary activities and with no accident or injury operating as a cause (Semancik vs. Casualty Co. (Pa. 1915) 43 Pa. Cty. 498 and Cas. Co. vs. Pittman (Ga. 1916) 89 S. E. 716). Soon, however, it became well established by repeated decisions in various jurisdictions that the *express inclusion* of sunstroke as a cause of injury or death had the effect of establishing that cause as one intended to be covered by the policy independently of any other event (Bryant vs. Cas. Co. (Texas 1916) 182 S. W. 673; Higgins vs. Cas. Co. (Ill. 1917) 118 N. E. 11; Elsey vs. Cas. Company (Ind. 1918) 120 N. E. 42).

These decisions often are quoted, and sometimes with misleading effect, in support of claims for sunstrokes and other unexpected and suddenly appearing diseases *under policies that do not expressly undertake such risks* and one court went so far afield as to declare sunstroke an accident because "popularly" so regarded though scientifically a disease and to find a responsible element of accidental means in the fact of sunstroke while returning from a trip into the desert, the distance of the objective having been miscalculated and thus involving an "unforeseen" period of exposure (Richards vs. Ins. Co. (Utah 1921) 200 Pac. 1017). Such a decision, however, may be regarded as so contrary to all reason as to be classed as a mere judicial vagary. But these experiences teach that an accident policy cannot be lifted even partly out of its legitimate field and still function as an accident policy.

Occasionally faulty wording of a policy, with consequent ambiguity, results in decisions wholly inapplicable to any other policy. Thus, where a policy insures against *"accidental death"* it will not be construed as insuring against *death from injury by accidental means* but covers death due to rupture of heart from

lifting or exertion, mere "accidental death" being an undesigned or unforeseen *result* even of an intended act or course of action (Pledger vs. Assn. (Texas 1917) 197 S. W. 889) and again where a policy insures against injury by external, violent OR accidental means, the expression being in the subjunctive, it is sufficient that the means be either external *or* violent though not accidental (Assn. vs. Norton (Okla. 1915) 145 Pac. 1138). But these decisions often are cited in other cases without directing attention to the different phrasing and the full consequential significance of that difference is not always recognized or given effect.

Accidental Means and Accidental Result

Even with most careful phrasing the dual condition of the insuring clause, i.e., that there must be an *accident* and that that accident must cause *injury,* is sometimes lost sight of, with resultant failure to discriminate between a *means* and a *result.* Thus so-called ptomaine poisoning has been held to be covered as an *unexpected result,* though following the intended act of eating exactly what was intended to be eaten (Johnson vs. Cas. Co. (Mich. 1915) 151 N. W. 593). This also fails to distinguish between an actual injury due to violence and the development of disease by orderly processes. The contrary is held in very similar circumstances (Martin vs. Assn. (Ia. 1919) 174 N. W. 577) while the same principle is established by rulings that death from dilatation of the heart following a cold plunge, though an unforeseen *result,* is not by accidental *means* (Cas. Co. vs. Johnson (Ohio 1915) 110 N. E. 475) that death from taking more liquor than presumably intended is not by accidental means (Calkins vs. Assn. (Ia. 1925) 204 N. W. 406) that death due to too violent inhalation of a nasal douche is not by accidental means (Smith vs. Ins. Co. (Mass. 1914) 106 N. E. 607) that a wound intentionally made by a barber in removing an ingrowing hair is not made by accidental means (Kendall vs. Assn. (Ore. 1918) 169 Pac. 751).

The distinction between a *means* and a *result* is well stated by the U. S. Circuit Court of Appeals where it says that under a policy insuring against death effected through injury by external, violent and accidental means the *means or cause* of death must

be accidental and it is not enough that the *death itself* is accidental in the sense of being unintended, unexpected or unforeseen, that a *means* is not accidental when employed intentionally though it produces a *result* not expected or intended. In this case the insured had a boil on his neck which he rubbed with soiled hands, thereby breaking the scab and admitting erysipelas germs, and died of that disease (Cas. Co. vs. Spitz (1917) 246 Fed. 817).

This distinction is again well stated by the Missouri Supreme Court in an opinion exhaustively reviewing many cases, and concluding that if a result is such as follows from ordinary *means voluntarily employed* in a not unusual or unexpected manner, it cannot be called a result effected by accidental means; but only if *in the act which precedes the injury* something unforeseen, unexpected or unusual occurs *which produces the injury* then the injury results from accidental means. The court finds from a review of cases that this conclusion is not contrary to a number of preceding decisions of the Supreme Court of Missouri but is contrary to a number of decisions of the subordinate Courts of Appeal of that state (from which it would appear again that those courts had misinterpreted the pronouncements of the Supreme Court) and moreover declares its present conclusion to be in harmony with the weight of authority throughout the country and in accord with the better reasoning. In this case the insured was operated for a disease but died instead of recovering as expected and it was contended that death was due to the unintended stoppage of blood vessels and that this was an unexpected *result* of the operation. (Caldwell vs. Ins. Co. (1924) 267 S. W. 907). A studious reading of this opinion will not only develop an understanding of the law as soundly applied to a plainly worded contract but will indicate that courts can go wrong, possibly through misapprehension or insufficient deliberation, possibly because of inadequate or inept presentation of the issue, possibly through psychological waves of sentiment to which judges as individuals are susceptible, possibly because of too great readiness to follow, without complete analysis, some previous decision astutely set up in a brief—but also that wrong decisions of courts can be righted by proper and able appeal to their fair judgment.

The New York Appellate Division also rules that a hernia appearing in the ordinary course of accustomed work is not an injury by accidental *means,* the insured doing only what he meant to do in the way he meant to do it; therefore it cannot be said that the *means* was accidental and the most that could be said is that the result was accidental (Fane vs. Assn. (1921) 188 N. Y. Supp. 222).

The Indiana Supreme Court holds that rupture of a blood vessel in the lung during exertion in shaking a furnace is not injury by accidental means (Husbands vs. Assn. (1921) 133 N. E. 130).

The Georgia Supreme Court holds that it is necessary to show that *in the act which precedes* the injury something unforeseen, unexpected or unusual occurred and that the straining of the body in pulling and pushing a boat, rupturing a blood vessel in the stomach, is not sufficient to make a jury question (Fulton vs. Cas. Co. (1917) 91 S. E. 228).

The California Supreme Court rules that death due to rupture of the heart while lifting or carrying a burden (Rock vs. Ins. Co. (1916) 156 Pac. 1029) or during the exertion of holding a plow in the course of work is not by accidental means (Ogilvie vs. Ins. Co. (1922) 209 Pac. 26).

The U. S. Circuit Court of Appeals reaffirms the principle in a case of rupture of a blood vessel during the exertion of steering and controlling an automobile in heavy going due to having accidentally strayed from the right road, holding that both the accidental and external elements were lacking (Lyon vs. Assn. (1928) 25 Fed. (2nd) 596) and still later that death due to exposure to excessive heat is merely the result of intended acts and there was no accident or injury (Nickman vs. Ins. Co. (1930) 39 Fed. (2nd) 763).

The Texas Court of Civil Appeals holds that there is a well established difference between "accidental injuries" and "injuries resulting from accidental means" and that an unexpected result of a voluntary act is not an injury from accidental means (Ins. Co. vs. Cherry (1931) 36 S. W. (2nd) 807).

These decisions, and many others of identical import, fairly reflect the law properly applicable to the language used to express the intent of an accident policy and constitute the authority given over the years for the use of that language. It will be observed

that all of these litigations grew out of obvious efforts to collect under accident policies for death or other effects due to disease, or in some instances mere failure of remedial measures to effect a cure. There are, of course, some decisions of contrary effect, as there are decisions contrary to every principle of law, however sound, but many of the contrary decisions may be reconciled by careful analysis while some must be regarded as mere variants from the rule recognized by the great weight of authority.

Independently of Other Causes

The insuring clause of an accident policy stipulates that the accidental means must be the *sole cause* of injury or, as more commonly expressed, must cause the injury "directly and independently of all other causes." Likewise the benefit provisions stipulate that the effects of the injury, i.e., loss of life, limb or sight, or disability, must result from the injury *alone,* "directly and independently of all other causes."

It is the plain purpose of these stipulations to confine the coverage to injuries and their resultant effects for which an accident is *alone,* rather than partly or even chiefly, responsible, for when disease is a causative factor, either in producing the injury or in developing the physical effects that follow, it is at once obvious that, with all the various degrees of causative influence, there would be great uncertainty as to the intent of the contract and frequent controversies and litigations with varying results, if such a definite line of demarkation were not clearly established.

The presence of these stipulations, however, and their significance are sometimes overlooked or disregarded, with confusing results. It was once held by the Kansas City Court of Appeals that, although an insured was fatally diseased and so afflicted that he would die from such affliction within a few hours, yet if by some accidental means his death were sooner caused the death was by accident (Hooper vs. Ins. Co. (1912) 148 S. W. 116). This clearly substituted a different contract and the St. Louis Court of Appeals later ruled that the burden is upon the plaintiff to show that accidental injury was the *sole cause* of death (Koprivica vs. Ins. Co. (1920) 218 S. W. 689). It has

been held that, where death is due partly to disease and partly to an accident that could not have caused injury but for the disease, the true question is whether he would have died *at the time he did* had it not been for the accident (Ins. Co. vs. Meldrum (Ga. 1919) 101 S. E. 306). This also reconstructed the contract and there was a vigorous dissenting opinion in which it was argued that the plain terms of the policy should be given effect.

These decisions are distinctly in opposition to the great weight of authority, holding that the *injury must be the sole cause* of death or other resultant loss, that if disease exists prior to the accident and the accident would not alone cause the death, or if the accident aggravates the effects of the disease or the disease aggravates the effects of the accident *and the two concur* to cause death, then the accident is not the cause of death independently of other causes (Assn. vs. Shryock (U. S. C. C. A.) 73 Fed. 774; Cas. Co. vs. Morrow (U. S. C. C. A. 1914) 213 Fed. 599); it is not enough that an accident is the proximate cause if death would not have resulted but for pre-existing disease (Ins. Co. vs. Ryan (U. S. C. C. A. 1918) 255 Fed. 483; Smith vs. Ins. Co. (U. S. D. C. 1925) 6 Fed. (2nd) 283); the plaintiff must show that disease did not contribute to death (Assn. vs. Nicholson (U. S. C. C. A. 1925) 9 Fed. (2nd) 7). In various jurisdictions the principle is upheld that mere concurrence of disease and accident does not establish liability under such a policy (Stokely vs. Cas. Co. (Ala. 1915) 69 So. 64; McEwen vs. Ins. Co. (Cal. 1916) 155 Pac. 84; Kellner vs. Ins. Co. (Cal. 1919) 181 Pac. 61; Leland vs. Assn. (Mass. 1919) 124 N. E. 517; Robinson vs. Ins. Co. (Texas 1925) 276 S. W. 900) and the same is true where a pre-existing disease is accelerated by accident (Penn. vs. Ins. Co. (N. C. 1912) 76 S. E. 262; Smith vs. Ins. Co. (N. Y. 1924) 202 N. Y. Supp. 857), (Kirkwood vs. Ins. Co. (La. 1930) 131 So. 703).

This, of course, does not mean that the mere existence of some disease or presence of some physical defect at a time when an accident occurs absolves the company from liability for the effects fairly attributable to that accident and defenses predicated upon that theory have been quite commonly unsuccessful. The principle applies only where disease is an active factor in causing the accident or in producing or increasing the physical effects thereof.

VII. The Defining or Limiting Clause

A defining or limiting clause may be employed to restrict the scope of the policy by expressly excluding coverage of certain accidents or diseases that otherwise would be covered under the insuring clause, in which case the exclusions are usually regulated by the extent of insurance to be granted and the premium to be charged and its main function then is to limit the insurance. Or it may be designed chiefly to define the insuring clause and to protect the policy against extension or distortion through unrestrained interpretation, while incidentally excluding a particular hazard deemed uninsurable, such as aviation, military service, or the like. One such clause of an accident policy reads as follows:

> "This insurance shall not cover suicide or any attempt thereat while sane or insane; nor shall it cover injuries, fatal or non-fatal, sustained while participating in aviation or aeronautics except as fare paying passenger; nor shall it cover accident, injury, disability, death or any other loss caused wholly or partly, directly or indirectly, by disease or bodily or mental infirmity or medical or surgical treatment therefor; nor shall it cover injury, disability, death or any other result caused wholly or partly, directly or indirectly, by ptomaines or disease germs or any kind of infection, whether introduced or contracted accidentally or otherwise (excepting only septic infection of and through a visible wound caused directly and independently of all other causes by violent and accidental means); nor shall it cover hernia of any kind, whether incurred before or after the date of this policy, or disability, death or any other loss resulting therefrom whether the hernia be caused or aggravated by violent or accidental means or otherwise. All insurance under this policy shall be automatically suspended if the insured shall become blind or insane, or if the insured shall engage in military or naval service in time of war, in which event the portion of the premium unearned during the period of such suspense shall be refunded."

If the policy includes health as well as accident insurance the following would be added to the foregoing:

> "The insurance against disease or sickness shall not cover any disease, sickness or disability contracted or suffered while engaged in military or naval service in time of war, or while outside the limits of United States, Canada or Europe; nor

> shall it cover any disease, sickness or disability caused wholly or partly by the use of intoxicants or narcotics or by accidental violence, or which results from or is the sequel of any disease contracted or infirmity existent prior to the date of this policy."

There would appear to be no reason in logic for stipulating that accident insurance should not cover disease, the effects thereof or results of treatment therefor, but there does appear to be reason in fact for fearing, at least occasionally, astonishing interpretations when this is not done. In other forms of contracts the affirmative specification of agreements to be undertaken is usually held to be conclusive of the whole intent, but in insurance contracts a negative statement frequently seems necessary to limit the search for means of determining intent not affirmatively expressed. Especially in the courts where, under the established rule, contracts are construed most strongly against the maker, distinctions often are made between policies containing and those not containing the negative provision and sometimes its omission is invested with unanticipated significance.

For example, a policy insuring against "injuries sustained through accidental means and resulting directly and independently of all other causes in death" has been held to cover death caused only partly by accident which accelerated an existing disease, the court ruling that "if the company intended to make its liability dependent upon the physical condition of the insured it *should have so stated* in plain terms in the policy" (Cas. Co. vs. Meyer (Ark. 1913) 152 S. W. 995) and to cover typhoid fever contracted by drinking polluted water in consequence of a mistaken connection of a feed pipe with the wrong water supply (Christ vs. Ins. Co. (Ill. 1924) 144 N. E. 161). And only recently the California Supreme Court departed from its long established and consistently followed doctrines to find that the accidental contraction of infectious disease by a professional nurse in the course of duty was covered under such a policy, holding that the company *should have excluded* such a risk if it was not intended to be assumed (Moore vs. Cas. Co. (1928) 265 Pac. 207, reversing on rehearing 258 Pac. 375). Again, where insured is on way to hospital for operation of appendectomy and is jolted in the ambulance, there would be liability if this accident hastened

death or prevented an otherwise probable recovery, the court in this instance *distinguishing other cases where the policies contained a negative clause* (Ins. Co. vs. Armbruster (Ala. 1928) 116 So. 164).

These decisions may be regarded as at odds with reason, as occasional strayings from the path of doctrinal rectitude, or even sometimes as mere judicial spasms, and they certainly are at variance with the doctrine of contract interpretation laid down by the New York Appellate Division that contracts of insurance, like other contracts, are to be considered according to the sense of the meaning of terms the parties have used and if they are plain and unambiguous the terms are to be taken and understood in their plain and ordinary sense (Sasse vs. Assn. (1915) 154 N.Y. Supp. 558). They are at variance also with many other decisions, such as the ruling that where death results from erysipelas in foot with no evidence as to exact means of infection it cannot be assumed that it entered through an accidental abrasion, when it appears that it also may have been otherwise contracted (Ins. Co. vs. Murray (Va. 1916) 90 S. E. 620); where death is from cancer developed soon after an accident and expert testimony is that cancer might have resulted from the accident or from the habitual position during daily work the evidence is insufficient to show death from accident (Green vs. Assn. (Ia. 1923) 190 N. W. 934); where loss of sight of an eye results from an embolus due to insured's general condition, but possibly aggravated by violent exertion, it is not a result of accidental means exclusively (Salinger vs. Casualty Co. (Ky. 1917) 198 S. W. 1163); where a rupture of a blood vessel occurs during an attack of vomiting it is the proximate result of sickness and not an injury due to accidental means (Assn. vs. Ross (Tex. 1927) 292 S. W. 193); where mastoiditis is attributed to infection through nose from diving into a swimming pool there was no accidental means and it is mere conjecture as to how or when the germs entered the system (Henderson vs. Ins. Co. (Mass. 1928) 160 N. E. 415); where gonorrheal infection of the eye follows use of a common towel it is mere contagion of the ordinary, normal tissues without aid of violent injury (Ins. Co. vs. Herndon (Ga. 1930) 151 S. E. 399).

However, the great importance of the negative clause, as a

means of escape from confusion at least, is illustrated by contrasting the Christ and Moore cases, above cited, with a more recent decision (Chase vs. Ins. Co. (U. S. D. C. 1931) 51 Fed. (2nd) 34). Here, exactly as in the Christ case, death was due to typhoid fever contracted by drinking polluted water believed to be pure, *but the policy contained a clause excluding injury caused directly or indirectly by disease* and the court held that the "injuries" were caused by disease and *were excluded from the coverage.* Under a policy similarly constructed the Moore case ought to be as clearly distinguishable.

Effects of Treatment for Disease

In absence of definite exclusion of liability for effects of treatment for disease there is danger that the company may be held liable, or at least involved in litigation, in cases where medical or surgical treatment fails to cure or some unexpected *result* follows. It has been held that, where a surgeon while operating for disease punctures an artery which was not where it should be in a normal person and this is assigned as a cause for following complications and death, the injury was by accidental means (Ins. Co. vs. Brand (U. S. C. C. A. 1920) 265 Fed. 6) and where novocaine was administered in preparation for an operation and the patient died, the death was held to be accidental on testimony that the insured had hyper-susceptibility to novocaine and therefore the unexpected and unusual *result* was accidental (Ins. Co. vs. Dodge (U. S. C. C. A. 1926) 11 Fed. (2nd) 486. It also has been held that, where a dentist in operating on the insured unintentionally introduced virulent germs by means of instruments he believed to be clean, the death was due to external, violent and accidental means (Horton vs. Ins. Co. (Cal. 1920) 187 Pac. 1070). On the other hand death following extraction of a tooth which made a port of entry for bacteria and resulted in blood poisoning is not due to injury by accidental means exclusive of all other causes (Ramsey vs. Cas. Co. (Tenn. 1920) 223 S. W. 841); where loss of sight of an eye follows extraction of a tooth there is no evidence to support the theory that it resulted from accidental means (Whipple vs. Cas. Co. (Va. 1922) 113 S. E. 878) and death fol-

lowing administration of nitrous oxide gas preliminary to extracting a tooth, the unusual *effect* being due to insured's abnormal condition, is not due exclusively to external, violent and accidental means (Barnstead vs. Assn. (N. Y. 1923) 198 N. Y. Supp. 416); or death resulting from anesthetics administered in preparation for a surgical operation and said to be due to hypersusceptibility, was not due to accidental means, there was no accident, no injury and the result would not be independent of other causes when due to hyper-susceptibility, which was a condition already existing (Hesse vs. Ins. Co. (Pa. 1930) 149 Atl. 96).

Notwithstanding the weight of authority in favor of reading the insuring clause to mean only what it affirmatively agrees to cover, however, it is coming to be deemed the part of wisdom to include the negative clause for defining effect. Where such a clause appears it usually is given its intended effect of excluding results of disease, of itself or in concurrence with a minor injury (Brown vs. Ins. Co. (1930) 39 Fed. (2nd) 443; Ins. Co. vs. Yates (Tex. 1930) 29 S. W. (2nd) 980; Naseef vs. Ins. Co. (N. Y. 1930) 245 N. Y. Supp. 430).

And such a clause must be constructed with exceeding care, for it will be construed as favorably as possible to the insured. Thus a policy excluding liability for *injury* caused or contributed to by disease has been held not to exclude *death* due partly to pre-existing disease, on the ground that the policy was doubtful or ambiguous in applying the exclusion only to the cause of injury and not to the cause of *death* (Cas. Co. vs. Thrush (Ohio 1926) 152 N. E. 796) and a policy excluding accident, injury, loss of limb or sight resulting wholly or partly from disease has been held to cover death from disease hastened by accident on the ground that the clause, apparently by inadvertence, did not specifically mention *death* partly due to disease as one of the risks not assumed and therefore was interpreted as discriminating between disability and death, notwithstanding the fact that the insuring clause insured against death only if due exclusively to injury (Ins. Co. vs. Hoehn (Ala. 1926) 110 So. 7). Likewise, where the policy stipulates that *injuries* must result *solely* from accident but as to death merely requires that it result from injuries, death is covered even though accelerated or contributed

to by other causes (Ins. Co. vs. Leifson (U. S. C. C. A. 1930) 37 Fed. (2nd) 488. It also has been held that where a policy or membership certificate, purported to insure against "accidental death" while the by-laws of the association restricted the insurance to death from injury by external, violent and accidental means, there is a repugnant conflict and the terms of the policy must prevail; consequently in this case death unexpectedly following extraction of a tooth was held to be an *accidental death*, though *not death due to accidental injury*, and this decision often is cited where the policy is differently worded (Francis vs. Assn. (Tex. 1924) 260 S. W. 938) and where a *special provision* is added to a policy to cover septic poisoning the *result of external inoculation through accidental contact* with septic matter, it covers inoculation of a dentist from a patient afflicted with pyorrhea and this decision also is cited frequently, sometimes with misleading effect, in support of claims under policies not including such a special undertaking (Merrick vs. Ins. Co. (Mo. 1916) 189 S. W. 392).

Hernia

The exclusion of hernia and ptomaines is a precaution against misconception by the insured, or interpretation by the courts, growing out of the "popular" theory that a hernia is an injury produced by some force or violence of a particular occasion, as it once was thought to be and in consequence miscalled a "rupture," instead of the gradual development of a natural process originating in a physical defect, as it is now known to be, and the similar idea that ptomaines, or food poisoning, arise from the taking of a foreign and poisonous substance, instead of being a mere manifestation of disease, or ill effects unexpectedly following the eating or drinking of food or drink intended to be eaten or drunk. Both of these conditions belong in the domain of health insurance, but as to these sources of popular misconception it is believed to be simpler to point to the exclusion than to explain the reason.

Infections

The subject of infections is a different one, for here the intent is to insure against the results of infections *entering through actual injury* and thus becoming merely one of the effects of the injury, which is the wholly responsible cause. And yet the necessity of excluding disease contracted through ordinary infection or contagion is apparent from some of the decisions already cited. By this means the contract establishes the line of demarkation between *injury accidentally sustained,* which is the legitimate subject of accident insurance, and *disease accidentally contracted,* which is the proper subject of health insurance.

Suicide

The exclusion of suicide, while sane or insane, relates to an intentional act and therefore not an accidental occurrence, if committed while sane, or an effect of disease, if committed while insane. In either event such an exclusion is not only a proper insurance practice but in accord with considerations of public policy.

Air Risks

Risks of aviation or aeronautics are excluded as so far within the control and volition of the insured and so hazardous as not to be deemed insurable. In many policies this exclusion is absolute as to all accidents occurring in consequence of such risks, while in others incidental participation as a fare paying passenger is permitted under certain restrictions, as that the flight be between established airports and under control of licensed pilots, etc., or, as in the foregoing clause, with no such restrictions.

Exclusions and Limitations in Health Insurance

The exclusions necessary as to health insurance are more simple, aiming to confine the insurance within such climatic conditions as to conform to the experience upon which rates have been calculated, to prevent double claims under both accident and

sickness provisions where the two causes are concurrent and, more important, to prevent imposition by obtaining insurance after a disease has been contracted or a condition acquired that soon or eventually will necessitate surgical operation, institutional care, or the like.

Special Exclusions

The limiting clause of an accident policy of course may be extended by excluding coverage of certain kinds or classes of accidents and sometimes this is done for the purpose of restricting the scope of insurance and reducing the cost. The extent to which this may be done is regulated only by the degree of insurance proposed to be granted and is subject to much variation and the limiting clause therefore performs a different function. An extreme example of such a clause is as follows:

> "Association shall not be liable in case of injuries of which there are no visible marks upon the body (the body itself not being deemed such a mark in case of death), or in case of injury happening to the member while in any degree under the influence of intoxicating liquors or narcotics or by reason of and in consequence of the use thereof; or when caused wholly or in part by any bodily or mental infirmity or disease, dueling, fighting, wrestling, or in acting as a soldier or sailor, by participation in war or riot, in public or agreed automobile racing, or by wrecking, mining, blasting, the moving or transportation of gunpowder or dynamite or other explosive substances, murder, disappearance, or hazardous adventure; injury resulting from an altercation or quarrel, voluntary over-exertion (unless in a humane effort to save human life), voluntary or unnecessary exposure to danger or to obvious risk of injury or by intentional injuries or acts inflicted by the member or any other person upon him while sane or insane, or when the member dies as the result of injuries sustained as a result of a gunshot wound or the alleged accidental discharge of firearms when there is no eyewitness except the member himself; injury received either while avoiding or resisting arrest, while violating the law or violating the ordinary rules of safety of transportation companies, or caused by disease or caused directly or indirectly by epilepsy, sunstroke, paralysis, apoplexy, fits, lumbago, vertigo, unconsciousness, sleep-walking, venereal diseases, cerebral, meningeal or spinal hemorrhage, or by ptomaine

poisoning, or by voluntary or involuntary, conscious or unconscious, inhalation of any gas, anesthetic, or vapor; provided, however, that in the event of disability from carbon monoxide poisoning from escaping gas from an automobile that death or disability benefits shall be paid when the death or disability was caused by accidental means. Association shall not be liable in case of injury resulting from any poison or infection, unless the infection is introduced into, by and through an open wound (which open wound must be caused by external, violent and accidental means and be visible to the naked eye) or from anything accidentally or otherwise taken, administered, absorbed or inhaled; death, loss of either hand, foot, arm, leg, sight of either eye or disability resulting from medical, mechanical, dental or surgical treatment (operation made necessary by the particular injury for which claim is made and occurring within six calendar months from date of accident excepted)."

At times the limiting clause is similarly extended in its relation to health insurance by excluding liability for disability due to certain diseases or by reducing the amount of benefit payable and the period limit. An example of such a clause is as follows:

"No indemnity for sickness shall be paid when disability is due to any of the following diseases or causes: hernia, orchitis, syphillis, venereal disease, circumcision, disease of the genital organs; or on account of corns, bunions, in-growing toe nail or abrasion of the feet, or by the use or abuse of intoxicating liquors, narcotics or other drugs, asphyxiation or suffocation, voluntary or unnecessary exposure to infectious or contagious disease or to the elements; nor for any disability caused or induced by violent, external or accidental means. No benefits for disability due to rheumatism, paralysis, neurasthenia or any nervous trouble, insanity or any mental trouble, tuberculosis, delirium or fits shall be paid in an amount to exceed $12.50 (half the amount insured) per week, nor for more than 10 weeks."

VIII. The Benefit Provisions

Death and Dismemberment

The first benefit provision usually is that which prescribes the specific sums payable for the major losses of life, sight and limb. To reduce the percentage of error in the clerical operation of issue it is customary to designate these as the full or a proportion of the principal sum already stated in the insuring clause. A typical clause reads as follows:

> "If such injuries, directly and independently of all other causes, shall, from the date of the accident, wholly and continuously disable and prevent the insured from performing any and every kind of duty pertaining to his occupation and if, during the period of such total and continuous disability and within 200 weeks from the date of the accident, such injuries shall, directly and independently of all other causes, result in any one of the losses named in the following schedule, the Company will pay the amount set opposite such loss and, in addition thereto, the weekly indemnity above specified from the date of the accident to the date of such loss.
>
> Or, if such injuries shall not so disable the insured, but shall, directly and independently of all other causes and within 90 days from the date of the accident, result in any one of the losses named in the following schedule, the Company will pay the amount set opposite such loss.

Schedule Referred to in Clause 1

For loss of life	The full principal sum above specified
For total and irrecoverable loss of sight of both eyes	The full principal sum above specified
For loss of both hands by severance at or above the wrist joints	The full principal sum above specified
For loss of both feet by severance at or above the ankle joints	The full principal sum above specified
For loss of one hand and one foot by severance at or above wrist and ankle joints	The full principal sum above specified

For loss of one hand by severance at or above the wrist joint and the total and irrecoverable loss of sight of one eye	The full principal sum above specified
For loss of one foot by severance at or above the ankle joint and the total and irrecoverable loss of sight of one eye	The full principal sum above specified
For loss of one hand by severance at or above the wrist joint	One-half of the said principal sum
For loss of one foot by severance at or above the ankle joint	One-half of the said principal sum
For total and irrecoverable loss of sight of one eye	One-third of the said principal sum

Provided always that, if more than one of the losses enumerated in the above schedule shall be sustained, payment shall be made only for the one for which the largest amount is specified."

This clause may and often does vary in several particulars. It may confine coverage of the respective losses to their occurrence within ninety days, or thirty days, or similar period after the accident, irrespective of disability during the interval; it is occasionally found to stipulate both for the short period and intervening disability; it may in either event provide only for payment of the specific sum or, as is more common, may provide as in the foregoing for loss occurring within ninety days or similar short period irrespective of disability and for loss occurring within the longer period in case total disability exists throughout the interval and for payment of disability benefit during that interval—thus stipulating in such cases for a continuous condition and a connected train of events, between the accident and the loss, sufficient to assure reasonable proof that the loss is due to the accident alone.

There may be variations also in the specifications of particular losses; some of those included in the foregoing may be omitted or others may be added, such as loss of thumb and index finger of the same hand in the same accident or loss of speech or hear-

ing; different sums may be provided for loss of arm or leg above the elbow or knee joints; different proportions of the principal sum may be allowed in different policies for the same particular loss. Mostly, however, these variations apply to losses or combination losses of rarest occurrence and are designed to supply "talking points" for selling purposes without contemplation of noticeable change in insurance cost.

From a technical standpoint the most vital part of this provision is its initial stipulation that the specific loss shall result solely from injuries insured against, that is, directly and independently of all other causes. In absence of this stipulation the policy might prove susceptible to the construction that whereas the injury must be due alone to accident it is not necessary that the death, or loss of sight or limb, be due alone to the injury.

It is essential also that loss of sight be designated as both total and *irrecoverable,* else minor impairments of vision might be held to be a loss of sight or recovery of benefit might be had as a preliminary to operative or other treatment resulting in recovery of sight also, as in cataract cases, for example.

It is held that the sight of an eye is deemed lost when there is no ability to distinguish or recognize objects, though light can be distinguished from darkness, but not when the sight is merely so impaired that the eye is not useful in particular work or at particular times, though normally objects could be distinguished (Murray vs. Ins. Co. (U. S. S. C. 1916) 243 Fed. 285); the insured must show that loss of sight is both entire and irrecoverable (Wilkins vs. Cas. Co. (Ga. 1917) 91 S. E. 224; Vinginerra vs. Cas. Co. (N. Y. 1916) 156 N. Y. Supp. 573) and color blindness, though disqualifying the insured from his occupation as railroad brakeman, is not complete loss of sight (Kane vs. Assn. (Neb. 1918) 168 N. W. 598). Where the policy stipulates for loss of sight within a stated period after the accident there is no liability where the loss occurs later (Buford vs. Ins. Co. (U. S. C. C. A. 1925) 3 Fed. (2nd) 263; Murray vs. Ins. Co. (U. S. S. C. 1916) 243 Fed. 285).

It is likewise essential to specify that loss of limb shall be *by severance* and at a *definite point,* else loss of *use* of the limb, which may even not prove permanent, may be construed as the loss of limb intended, while, if a definite point of severance is

not specified, various degrees of approximation may be substituted for that contemplated.

Thus, where the policy provided merely for "loss of arm" it is not necessary that it be severed but only that it appear useless (Assn. vs. Hancock (Tex. 1915) 174 S. W. 657) but where the policy stipulates for severance loss of use is not sufficient to establish liability (Cas. Co. vs. Shelby (Miss. 1917) 76 So. 839). Likewise, where the policy provides for loss by severance but without specifying the point of severance, removal of any material portion is sufficient (Assn. vs. Brazington (Ind. 1919) 123 N. E. 221) while, with the point of severance stipulated, the removal of any lesser portion is not sufficient (Assn. vs. Walsh (Ohio 1914) 59 Ohio Law Bull. 255; Newman vs. Ins. Co. (Mo. 1915) 177 S. W. 803; Cas. Co. vs. Bows (Fla. 1916) 72 So. 278; Hardin vs. Cas. Co. (Tex. 1917) 195 S. W. 653). It is also held that where the policy stipulates for severance within a stated period after the accident there is no liability for loss occurring at a later time (Orenstein vs. Ins. Co. (Minn. 1917) 163 N. W. 747).

Disability in Accident Insurance

Total and partial disability are provided for in the shape of a stated weekly benefit for each and these clauses may, for purposes of accident insurance, read as follows:

> "If such injuries shall not result as specified in Clause 1, but directly and independently of all other causes, shall, within two weeks from the date of the accident, continuously and wholly disable and prevent the insured from performing any and every kind of duty pertaining to his occupation, the Company will pay the insured the weekly indemnity above specified for the entire period of such total disability."
>
> "If such injuries shall not result as specified in Clause 1, but, directly and independently of all other causes, shall, within two weeks from the date of the accident or immediately following total disability, continuously disable and prevent the insured from performing some one or more important daily duty or duties pertaining to his occupation, the Company will pay the insured one-half of the weekly indemnity above specified for the period of such partial disability, not exceeding 26 weeks."

In many policies these clauses stipulate that the disability shall begin immediately or from the date of accident, thus to provide for an immediate development as evidence of cause and effect, and leaving it to discretionary practice to recognize disabilities developing after an interval when the claims appear meritorious. Or the clause may, like the foregoing, specifically allow the stated period of two weeks between accident and disability. The total disability clause may vary also by fixing a maximum period for which benefit is payable, instead of covering the entire period, as the partial disability clause uniformly does. Period limits in either clause are of course subject to variation in different policies and there may be variation also in the proportion of benefit payable for partial disability, though the most usual rate is one-half.

More recently a further provision has been rather generally added to the total disability clause, fixing a different definition for such disability when it exceeds fifty-two weeks in duration, as follows:

> "If such disability shall continue for the period of 52 weeks and if the insured shall be then and thereafter continuously and wholly disabled by such injuries, independently of all other causes, from engaging in any and every occupation or employment for wage or profit, the Company will continue the payment of the weekly indemnity so long as the insured shall be so disabled."

In some policies two degrees of partial disability are provided for, with different rates of benefit, in which case the one of greater degree is denominated "intermediate" disability and is defined in the policy as inability to perform "a major portion of the daily duties pertaining to the occupation" or, in some instances, "prevent performing work substantially essential to the duties of the occupation." At times either of these expressions is used to identify partial disability without discrimination between so-called intermediate and partial and without difference in benefit payable.

Disability in Health Insurance

Total disability for purposes of health insurance is similarly provided for under substantially identical conditions except for the stipulation for medical treatment, usually included, the pur-

pose of which is to preclude claims for voluntary absence, with allegation of petty ills impossible to verify, and upon the reasonable theory that an insured sick enough to necessitate total abstention from work should be under the care of a physician and should be prepared to furnish competent certification. Partial disability is not commonly provided for but when it is it usually is restricted to a period of recuperation following a totally disabling sickness as the only means of judging as to the actual existence of a partial disability and of protecting the body of fair dealing policyholders against increased cost of insurance by reason of petty impositions by a limited number.

Following are examples of these clauses:

> "If such disease or sickness, directly and independently of all other causes and while this insurance is in force, shall continuously and wholly disable and prevent the insured from performing any and every kind of duty pertaining to his occupation and shall require and receive the continuous care and treatment of a legally authorized physician, the Company will pay the weekly indemnity for the period of such total disability, not exceeding 52 weeks.
>
> "If such disease or sickness, directly and independently of all other causes and immediately following such total disability of not less than seven consecutive days' duration, shall continuously and wholly disable and prevent the insured from performing some one or more important daily duty or duties pertaining to his occupation, and shall throughout the period of such partial disability require and receive the continuous care and treatment of a legally authorized physician, the Company will pay one-half of the weekly indemnity for the period of such partial disability, not exceeding 10 weeks."

In some policies a different clause is used, in which total disability is contractually measured by the factor of house confinement and in such cases there may or may not be an additional provision for reduced benefit during total disability while not confined to house. Examples of such clauses are as follows:

> "A. If such disease shall wholly and continuously disable the insured and prevent him from performing any and every duty pertaining to his occupation and shall confine him to the house, the Company will pay the weekly indemnity hereinafter specified for the period of such continuous disability and confinement to the house.
>
> B. And if, immediately following such a period of total

disability and confinement to the house, such disease shall wholly and continuously disable the insured and prevent him from performing any and every duty pertaining to his occupation, but shall not confine him to the house, the Company will pay weekly indemnity of one-half the amount hereinafter specified for the period of such continuous disability.

Indemnity under Sections A and B of this Part for confining or non-confining disability, singly or combined, shall be payable for not exceeding fifty-two consecutive weeks."

In some policies further conditions are included in these clauses, i.e., that the insured shall, while confined to the house, be regularly visited therein and treated by a physician, or that such visits or treatments shall be of a stated frequency, or in rare instances that the insured be confined to bed; these variants are usually for the purpose of limiting the insurance to cover the more serious illnesses and thus reducing the cost. These clauses may also be qualified by a condition that sickness occurring within a stated period, such as thirty or sixty days, after the policy date shall not be covered, the purpose of course being to protect the Company against the obtaining of insurance when illness is known to be impending.

In some policies the disability, whether from accident or sickness, is contractually specified as inability to work in any and every occupation or business for wages or profit.

What Constitutes Total or Partial Disability

What constitutes total or partial disability, in the light of the plain terms of a policy, is, in simple reason and logic, obvious enough. In common practice little difficulty attends the ascertainment of liability and pursuant adjustment of claims. The vast majority of claims are made fairly in accordance with the policy terms and, where misunderstandings occur or excessive demands are made, the insured is alive and available for negotiation and reconciliation of possibly differing views; amounts at stake are not often very great and, with the commonly prevailing spirit of liberality on the part of the companies, combined with their privilege to cease insuring one found unfair, unreasonable or predatory, astonishingly little litigation results in proportion to the enormous number of claims dealt with.

Even where disputes are referred to the courts the various cases are so variously affected by varying facts and circumstances that one case rarely fits another with any degree of exactness. Certain principles of law, however, have been reasonably well established, though with the occasional divergencies of opinion that always constitute the hazards of litigation.

It is reasonably held that, where there is serious injury or disease and after a period of total disability there is an attempt to resume work with quick development of an even more serious condition, there was continuous total disability; (Joiner vs. Cas. Co. (Tex. 1915) 178 S. W. 806) and that total disability does not imply that there is no physical ability to attend to some duties, where the injury is such that common care and prudence require the insured to desist from his work (Cas. Co. vs. Bryant (Tex. 1916) 185 S. W. 979) but it is less easy to find a distinction between total and partial disability in a ruling that one able to do a third of his work is *totally* disabled upon the theory that disability from *any and every* duty means inability to do *all* the substantial or material acts required in the occupation (Cas. Co. vs. Logan (Ky. 1921) 229 S. W. 104). The plain terms of the policy are generally given their proper effect and a cotton factor who showed only inability to sample cotton was held not to be totally disabled where it appeared that there were many other duties in the occupation of cotton factor that he could perform (Cas. Co. vs. Chew (Ark. 1909) 122 S. W. 642) and where in other occupations there was ability to perform at least a part of the regular duties (Cas. Co. vs. Henderson (Ark. 1917) 192 S. W. 206; Ins. Co. vs. McCullogh (Ky. 1921) 229 S. W. 1034). Likewise, where the policy insures against disability from *any and every occupation* or from work of any kind, it does not mean disability from the usual occupation or the one in which the insured is at the time employed but means any occupation for which the insured is fitted (Assn. vs. Roos (Ind. 1916) 113 N. E. 760; Ins. Co. vs. Jones (Miss. 1917) 73 So. 566).

Again, however, the faultily worded policy produces a decision which, upon careless reading, may appear at odds with reason and at variance with other authorities. Thus, under a policy insuring against disability merely from "every occupation" the insured may recover though he returned to work to perform a

part of his duties (Cas. Co. vs. Bowman (Ind. 1917) 114 N. E. 992) and a little analysis will show that "every" occupation does not mean "any and every" occupation, nor does the word "any" alone have the same significance, whether used to qualify the word "occupation" or the word "duty."

Immediate and Continuous Disability

Where the policy provides for disability immediately or from the date of accident the factor of time is quite uniformly given its intended effect and naturally so, not only because of the terms of the policy but also because in such cases the relation of cause and effect is at least exceedingly dubious; hence disability developing after intervals of weeks or months from the date of accident is held not to be immediate (Hefner vs. Cas. Co. (Tex. 1913) 160 S. W. 330; Mullins vs. Assn. (Mo. 1914) 168 S. W. 843; Hefner vs. Cas. Co. (Tex. 1920) 222 S. W. 966; Feitel vs. Cas. Co. (La. 1920) 84 So. 491; Assn. vs. Farrar (Ind. 1920) 126 N. E. 435; Herwig vs. Assn. (Mo. 1921) 234 S. W. 853; Thompson vs. Ins. Co. (La. 1923) 98 So. 746; Ins. Co. vs. Penzel (Ark. 1924) 261 S. W. 920; Penquite vs. Ins. Co. (Kan. 1926) 246 Pac. 498). These authorities give essential protection against attempts to attribute disease to some ancient accident or to predicate claims for disability occurring after expiration of insurance upon events alleged to have happened while the insurance was in force.

Similarly the stipulation that disability shall be continuous is given its intended effect and intermittent disabilities speculatively attributed to a single originating cause, and recurrence after a definite termination of disability, are held not to be within the specification of continuous disability (Mullins vs. Assn. (Mo. 1914) 168 S. W. 843; Harper vs. Ins. Co. (Ky. 1919) 209 S. W. 349; Cas. Co. vs. Logan (Ky. 1921) 229 S. W. 104).

House Confinement as Measure of Disability

Where the policy stipulates for house confinement as the measure of total disability from sickness that stipulation is usually interpreted in the light of reason. It has been rather erratically held that the purpose of this stipulation is to give the company evidence of disability but that nevertheless in absence of such

evidence the existence of such disability may be determined otherwise — even from argumentative assertions of facts not included in the actual testimony (Cas. Co. vs. Hawes (Ky. 1912) 149 S. W. 1110). More reasonably it is held that merely going out for air occasionally, or ability to leave the house only for purposes connected with the sickness, or being removed from one place to another for treatment, does not negative the fact of substantial confinement (Ins. Co. vs. King (Miss. 1912) 59 So. 807; Hines vs. Ins. Co. (N. C. 1916) 90 S. E. 131; Ins. Co. vs. Willetts (U. S. C. C. A. 1922) 282 Fed. 26).

But where the evidence fails to show that there is a real confinement it is not sufficient to show disability existed notwithstanding (Bruzas vs. Cas. Co. (Me. 1914) 89 Atl. 199; Cas. Co. vs. Niedlinger (Miss. 1917) 73 So. 875; Rocci vs. Ins. Co. (Mass. 1917) 116 N. E. 477; Pirsher vs. Cas. Co. (Md. 1917) 102 Atl. 546; Reeves vs. Cas. Co. (Wis. 1919) 174 N. W. 475; Cas. Co. vs. Sanderson (Ark. 1920) 222 S. W. 51; Heymann vs. Cas. Co. (La. 1920) 86 So. 550; Sheets vs. Assn. (Kan. 1924) 225 Pac. 929).

One court aptly remarks that, where there is total disability but no confinement, the "court is unable, with only judicial construction as the instrument, to perform the major operation of removing the appendix of confinement to the house from the body of total disability" and refers to without endorsing another opinion in which it is said that "courts incline to pit judicial astuteness against the astuteness of the policy maker" but refrains from engaging in that pastime (Bucher vs. Cas. Co. (Mo. 1919) 215 S. W. 494).

It is startling to find that such a sentiment as that last quoted could appear as a consideration in the deliberations of learned administrators of American justice, for it would amount to a denial by judicial fiat of the right of freedom of contract and an assumption of power to unmake any agreement that may be made. It suggests, however, a mistaken conception that comparison can fairly be made between a contract limited in scope in consideration of a lesser price and a more complete one at a greater cost, with the right of choice vested in the one party equally with the other. It is equally startling to find another court asserting that an insured is given no protection at all if he is not given both

health and life insurance when he buys accident insurance only and then seeking an intent not expressed in the policy by interpreting the mere name of the policy, i.e., the "business woman's disability policy" to imply an intent to insure against anything that happens to an employed woman, converting the mere title of the occupational classification, i.e., "preferred" as implying that there could be no hazard connected therewith that was not to be covered, and thus rebuilding a contract from material never provided by the parties. But these are merely occasional episodes that do not by any means represent or reflect the wisdom and balance prevailing in our courts.

Attendance by Physician

Where the stipulation is that the insured shall be not only confined to the house but attended therein by a physician, it is held that communication with a physician through members of the family, or over the telephone, and visits to the physician after confinement terminates, do not meet requirements of the policy, even though evidence of total disability is conclusive (Campana vs. Assn. (N. Y. 1921) 186 N. Y. Supp. 82).

The stipulation for treatment by a legally qualified physician also is held valid and "just as good" treatment by a chiropractor, though permitted by law to practice that profession, is not the thing specified by the policy (Isaacson vs. Assn. (Wis. 1925) 203 N. W. 918).

Where the policy provides only for total and permanent disability from *any and all* gainful occupations an insured who has lost one arm cannot recover, since he is not thereby prevented from following all occupations though he cannot return to his former occupation (Buckner vs. Ins. Co. (N. C. 1916) 90 S. E. 897) and an insured whose disability has in fact terminated cannot recover for *permanent* disability, notwithstanding a provision for proof after sixty days continuance of such disability; permanent does not mean temporary and, while fairness requires that reasonable proof of permanency be accepted and benefit paid while such permanency lasts, liability ceases when disability terminates (Hawkins vs. Ins. Co. (Ia. 1928) 218 N. W. 313). A clause presuming permanency after three months' duration is in-

tended to extend benefits where doubt exists but insured's admission of recovery when presenting claim is sufficient to prevent recovery of benefit (McKenzie vs. Ins. Co. (N. Y. 1931) 251 N. Y. Supp. 528).

Double Benefits

The double benefit clause, while not contained in all policies, is very commonly included. It found its origin in the prevalent belief that unusual hazard is involved in travel and in the common custom of buying extra insurance in the form of "trip tickets" when starting on a journey. In order to furnish this additional insurance, automatically as needed and at less cost and greater convenience, a clause was introduced into the accident policy under which the insurance was doubled in event of injury in consequence of the wrecking of a railroad train; this was soon extended to include the foundering of a steamship and later to cover any accident occurring while traveling in any public passenger conveyance and, most generally, without regard to whether the conveyance shall be wrecked, damaged, or otherwise involved in the accident.

Some of these double benefit clauses still are conditioned upon wrecking of or accident to the conveyance but more commonly they are of the broader form.

An example of such a clause is as follows:

> "If such injuries be received (a)—while the insured is riding as a passenger in or on any public conveyance (except aerial conveyances) of a common carrier regularly provided for passenger service (including the platform, steps or running board of such conveyance but not while or in consequence of attempting to enter or leave such conveyance); or (b)—while riding as a passenger in a regular passenger elevator car; or (c)—in consequence of the burning of any building in which the insured shall be at the commencement of the fire; the amounts payable for any of the losses enumerated in the preceding clauses shall be doubled."

In some policies this clause is carried further to include, in the specified causes of accident subject to double benefit, collapse of outer walls of a building, stroke of lightning, explosion of a steam boiler, cyclone or tornado, and earthquake. Any or all of these

may be found in various policies without difference in premium and occasionally double benefit may be provided for accidents to private automobiles but in that event an additional premium is charged.

As may be expected such a clause, holding possibilities of double recovery and especially in cases of fatal accidents involving important sums, has been somewhat subject to attempts to carry it beyond its intended meaning. And so it has been necessary for the courts to rule that a caboose attached to a cattle train is not a passenger conveyance (Zantow vs. Ins. Co. (Neb. 1920) 178 N. W. 507) that a picnic wagon furnished by a transfer company is not a public conveyance of a common carrier (Ins. Co. vs. Easter (Ala. 1915) 66 So. 514) that an automobile is not a public conveyance (Rubens vs. Cas. Co. (Ind. 1919) 122 N. E. 786) and the same is true of automobiles hired from garages for specific trips (Rathbone vs. Ins. Co. (Ill. 1921) 132 N. E. 754, and Cheney vs. Ins. Co. (U. S. C. C. A. 1925) 4 Fed. (2nd) 826) and that an airplane taking passengers by special arrangement on agreed flights is not a public conveyance nor operated by a common carrier (Ins. Co. vs. Pitts (Ala. 1925) 104 So. 21, and Brown vs. Ins. Co. (U. S. C. C. A. 1925) 8 Fed. (2nd) 996). A taxicab operated by a company carrying all comers but subject to the orders of the passenger is held not to be a public conveyance (Darnell vs. Cas. Co. (Tenn. 1915) 46 Ins. Law Journal 523) while the contrary is held under most similar conditions (Anderson vs. Cas. Co. (N. Y. 1920) 127 N. E. 584).

Where the clause is silent as to double benefit while getting *on or off* of the specified conveyances nice questions are likely to arise. In such case, a passenger in act of alighting, with one foot on the step and the other on the pavement, is still a passenger and double benefit applies (Gibson vs. Cas. Co. (N. Y. 1913) 140 N. Y. Supp. 1045) and another who falls while boarding a car, with his body on the platform and legs hanging down, is in or on the conveyance (Rosenfeld vs. Ins. Co. (N. Y. 1916) 161 N. Y. Supp. 12) but one who endeavored to board a moving train, missed his hold and fell to the ground, was not riding as a passenger (Anable vs. Cas. Co. (N. J. 1906) 63 Atl. 92) and such a clause requires that the passenger be at least on the steps of the car (Fay vs. Ins. Co. (Mo. 1916) 187 S. W. 861).

It has been necessary also to rule that a subway *station* platform is not the platform of a *conveyance* (Weil vs. Ins. Co. (N. Y. 1917) 166 N. Y. Supp. 225) and that the word "on" will not be construed to mean adjacent or alongside, as the word is used to describe a city as "on" a river, in order to apply the double benefit clause to one killed by the sudden starting of an automobile while standing on the ground in front of it (Turner vs. Cas. Co. (Mo. 1918) 202 S. W. 1078).

Occasionally this clause is more closely conditioned to cover only while riding in a place regularly provided for occupancy of passengers during transportation, in which case it is held not to apply either while boarding or while on the platform (Mitchell vs. Ins. Co. (Mo. 1914) 161 S. W. 362 and Ins. Co. vs. Fleming (Md. 1916) 96 Atl. 281).

A passenger elevator is one customarily used for conveying passengers (Wilmarth vs. Ins. Co. (Cal. 1914) 143 Pac. 780) and this would not include an elevator in a garage designed for conveying automobiles and the fact that persons were permitted at times to ride on it did not change its character (Losie vs. Ins. Co. (N. Y. 1918) 171 N. Y. Supp. 174).

Where double benefit is provided for injury or death in consequence of the burning of a building it does not mean injury or death from burns sustained while in a building, or even if the building subsequently is burned, but the burning of the building must precede and be the cause of injury or death of the insured (Cas. Co. vs. Edgar (U. S. C. C. A. 1913) 203 Fed. 656; L'Ecuyer vs. Ins. Co. (Kans. 1916) 155 Pac. 1088; Farley vs. Ins. Co. (Mo. 1918) 207 S. W. 281; Kreiss vs. Ins. Co. (N. Y. 1920) 127 N. E. 481; Arnold vs. Ins. Co. (R. I. 1927) 136 Atl. 690).

Medical and Surgical Benefits

Medical Attendance

Accident policies commonly contain a provision for payment of doctors' bills in case of minor injuries that do not cause disability or furnish other basis for benefit claim. An example of such a clause follows:

> "If any injury covered by this policy and sustained by the insured does not cause a result for which an indemnity is

provided by this policy, but requires and receives treatment by a legally authorized physician, the Company will reimburse the insured for the cost of such treatment, not exceeding one week's indemnity as provided in Clause 2."

Surgical Operation Fees

Provision for additional payment of stated sums in case of certain surgical operations as specifically listed in the policy is commonly made. Where the policy is for accident insurance only the schedule of operations includes only those necessitated by accidental injury, while a policy of accident and health insurance includes many others necessitated by disease. The stated amounts fixed for the various operations are, of course, regulated by the amount of the insurance. An example of such a clause applicable to both accident and health insurance is as follows, and this would be modified in case of accident insurance by merely omitting the reference to disease.

"If any injury or disease covered by this policy shall, within ninety days from the date of the accident or of the contraction of the disease, alone and necessarily require any surgical operation named in the Schedule of Surgical Operations endorsed hereon, the Company will pay the insured the sum set opposite the said operation in the said schedule, provided always that, if more than one such operation shall be necessitated as the result of any one accident or disease, payment shall be made only for the operation first occurring."

Hospital Benefit

There is variation in practice in respect to increased benefit during hospitalization. There is often no such provision as respects accident insurance but it is more common in policies of accident and health insurance and occasionally it is found in accident policies only. There is variation also in the amount of additional benefit provided and in the number of weeks for which it may be payable, some policies allowing double the regular weekly benefit and others an increase of 50 per cent., while in still others the additional benefit is regulated by the actual amount expended for hospital expenses but with a certain limit in proportion to the amount of insurance. The period for which additional benefit is allowed may be ten, twelve or twenty weeks,

or various other periods, and the longer periods may be coincident with the smaller amounts of additional benefit. Examples of clauses of both types are as follows:

> "If such disease or sickness, directly and independently of all other causes and while this insurance is in force, and within ninety days from the beginning of such disease or sickness, shall necessitate the removal of the insured to any regular hospital, the weekly indemnity payable for the period, not exceeding 10 weeks, during which he shall be continuously and necessarily confined in the said hospital, shall be doubled, provided that the insured shall not make claim under Clause 12 (surgical operations) on account of the same disease or sickness."
>
> "If the insured is necessarily and continuously confined in a hospital by reason of injuries, or disease or illness covered by this policy, the Corporation, in addition to the Indemnity otherwise payable, and in lieu of Surgical Indemnities or Graduate Nurse Expense, will pay the amount expended for hospital expenses, not exceeding one-half the single weekly indemnity specified in Section Two, for each week that the Insured is so confined, but for not more than ten consecutive weeks."

Nursing Benefits

Occasionally policies include a further provision for additional benefit for the cost of professional nursing in lieu of the surgical or hospital benefits. An example of such a clause is as follows:

> "In lieu of any sum payable for Surgical Indemnities or Hospital Expense, the Corporation, in addition to the indemnity otherwise payable, will pay the amount expended each week for graduate nurse, not exceeding one-half the single weekly indemnity provided in Section Two, but for not more than ten consecutive weeks."

Identification

This clause, quite commonly included in accident policies, usually appears as follows:

> "If the insured shall, wholly by reason of injury covered by this policy, be rendered physically unable to communicate with friends, the Company will, upon receipt of a telegram or other message giving this policy number, immediately transmit to the relatives or friends of the insured any information respecting him and defray all expenses necessary

to place the insured in communication with and in the care of friends, not exceeding a sum equal to four weeks' indemnity at the rate per week provided in Clause 2."

Accumulations

In former years a practice was in vogue in which the principal sum of the policy was increased on each year's renewal, sometimes at the rate of 10 per cent. and other times at the rate of 5 per cent. annually, such increases continuing until the principal sum had been increased by a total of 50 per cent. The purpose of this, of course, was to encourage persistency of renewal and thereby to reduce lapsation. The effectiveness of this provision was soon destroyed by a competitive practice whereby a company to which the insurance might be transferred assumed the accumulations acquired under the policy in the former company and this practice presently developed into one of issuing policies originally for principal sum equal to the fully accumulated amount at the same premium as formerly charged with the accumulation provision. An example of such clause which occasionally still appears in some policies is as follows:

"If all premiums are paid annually, the original principal sum hereby insured will be increased ten per cent. beginning with the second year and continuing for five consecutive years, until such increases amount to fifty per cent. of the original principal sum and thereafter, so long as this Policy is maintained in force by annual premium payments, the amount insured shall be the original principal sum plus the accumulations.

"If premiums are paid otherwise than annually, the original principal sum hereby insured will be increased five per cent. beginning with the second year and continuing for ten consecutive years, until such increases amount to fifty per cent. of the original principal sum and thereafter, so long as this Policy is maintained in force, the amount insured shall be the original principal sum plus the accumulations."

Blindness and Paralysis

Some policies include a special provision for an additional lump sum payment at the expiration of the disability period limit in case of permanent blindness or paralysis resulting from disease. An example of such a clause is as follows:

"If such disease or sickness, directly and independently of all other causes and while this policy is in force, shall result in the total and irrecoverable loss of sight of both eyes, or in permanent paralysis whereby the insured shall entirely lose the use of both hands or of both feet or of one hand and one foot, and if, wholly because of such loss of sight or such paralysis, the insured shall be continuously and wholly disabled and prevented from performing any and every kind of duty pertaining to his occupation for a period of one year, and at the end of said period of one year shall still survive and shall be permanently unable to perform any and every kind of duty pertaining to his occupation, the Company will pay a sum equal to the weekly indemnity for 100 weeks, in addition to any sums payable under Clause 9 on account of the same disease, sickness or disability."

Participation in Divisible Surplus

One company issues a participating form of accident and health insurance similar in effect to the practice common in life insurance. An example of such a clause is as follows:

"This policy is a participating contract and, commencing not later than the end of the third policy year, the Company will annually, if and while this policy is in force, ascertain and apportion any divisible surplus accruing hereon, after setting aside such an amount for a contingency reserve as the directors of the Company shall deem necessary."

IX. The Consideration Clause

The consideration clause of such a policy expresses two considerations, viz: the statements of fact in the application and the payment of the premium. An example of such a clause is as follows:

"In consideration of the statements in the application, copy of which is attached hereto, and of the payment of the premium."

In earlier days the statements in the application were expressly made warranties, with the effect that the validity of the contract was conditioned upon the exact truth of each and all of such statements, irrespective of any question of materiality or intent, because a warranty must be literally and strictly true or the policy will not take effect (Kahn vs. Ins. Co. (Cal. 1918) 178 Pac. 331; McManus vs. Cas. Co. (Me. 1915) 95 Atl. 510).

In present practice, however, and in accordance with the terms of the Standard Provisions laws, the statements in the application are deemed representations of fact and the policy is voided only if false statements are made with intent to deceive or materially affect either acceptance of the risk or the hazard assumed by the company. Statements relative to the previous condition of the insured are material (Porter vs. Ins. Co. (Cal. 1916) 157 Pac. 825) as also are statements relative to previous cancellations or refusals to insure by other companies (Cas. Co. vs. Eddy (U. S. C. C. A. 1917) 239 Fed. 477) or collection of claims from other companies (Cas. Co. vs. Collins (Ind. 1920) 126 N. E. 86) or as to past medical treatment (Stanulevich vs. Ins. Co. (N. Y. 1920) 127 N. E. 315) or as to the character of occupation and duties (Murray vs. Ins. Co. (Ia. 1925) 201 N. W. 595) or that earnings exceed the weekly benefits provided by the insurance (Wicklow vs. Ins. Co. (N. Y. 1927) 221 N. Y. Supp. 157).

The actual payment of premium is in fact a condition precedent to the validation of the policy, but this may be modified by a course of action. Thus the physical delivery of the policy and the agreed extension of credit for payment puts the insurance in force (Huestis vs. Ins. Co. (Minn. 1916) 155 N. W. 643; Lafferty vs. Cas. Co. (Mo. 1921) 229 S. W. 750). But where an insured refused to accept a policy issued and offered to him, declaring that he did not want it but failed to return the policy, there was no liability for accident occurring while it was in his possession (Cas. Co. vs. Grace (Miss. 1916) 70 So. 577) and insurance is not kept in force by the issue of a renewal and the forwarding of the same to the company's agent with privilege of returning if not paid and the insured does not pay (Amos vs. Cas. Co. (Md. 1917) 102 Atl. 1001) nor even by remittance of premium by the agent to the company where the insured declared he did not intend to renew and refused to pay (Grogan vs. Ins. Co. (Colo. 1914) 139 Pac. 1045).

X. Copy of Application

The copy of the application, contractually made a part of the policy, is attached to or endorsed upon the policy. This may be by photostatic or other copy fastened to the policy or by printing the application form upon the policy and filling in the written

parts to correspond with the original. Thus the insured is at all times in possession of a copy of the statements he has made over his signature and for the truthfulness of which he is responsible.

XI. Conditions of Performance

The general conditions of performance, pertaining to the effectiveness and continuance of the insurance and the rights and obligations of the parties during its operation, were formerly subject to great variation and sometimes rather onerous conditions were included. The standard provisions, now statutory in a considerable number of states and commonly used in all policies, have for some years established a standard of fairness and reasonableness as a result of practically arbitral judgment of the lawmaking power as between the respective rights of the parties.

No other conditions inconsistent with or contradictory to any of the statutory provisions are permissible but certain provisions necessary to comply with special requirements of particular states, or relating to subjects not included within the statutory provisions, are commonly inserted under the caption of special or additional provisions, the intent and purpose of which are readily apparent from the reading. An example of such a clause is as follows:

> "If the age of the insured has been misstated in the application the indemnities payable hereunder shall be such as the premium paid would have purchased at the correct age. The copy of the application attached hereto is hereby made a part of this contract. No provisions of the charter, constitution, or by-laws of the Company not included herein shall avoid the policy or be used in evidence in any legal proceedings hereunder. This policy is issued by the Company and accepted by the insured subject to the following provisions prescribed by law and shall be void if any of the statements or answers in the application are false and such false statements or answers are made with intent to deceive or if such false statements or answers materially affect either the acceptance of the risk or the hazard assumed by the Company. Failure of the insured or beneficiary to comply with any of the provisions or requirements of this policy shall invalidate all claims.
>
> "This policy may, with the consent of the Company, and subject to all of the terms, conditions and provisions of this

policy, be periodically renewed upon each successive expiration, for a further period of equal number of months, upon the payment of the premium herein stated, as the premium for each such successive renewal. This provision for renewal shall cease to be in force upon the expiration of the period next preceding the sixtieth birthday of the insured. Upon each such renewal a grace of thirty-one days, without interest charge, shall be granted for the payment of the premium, during which period the insurance shall continue in force."

Such a clause is of course subject to certain variation; for example, the reference to misstated age would not be included in a policy for which the premium does not vary with age, provision for grace may be omitted, the reference to renewal may be omitted or may be altered to vest right of renewal in the insured, as in case of a non-cancellable form, and other conditions may be added in certain forms of policies—always provided they are not in conflict with any of the standard provisions. An example of the renewal provision of a non-cancellable policy is as follows:

"The insurance under this policy does not cover the insured after he passes the age of sixty years, but until that time he shall have the right to renew this policy from year to year by payment of the premium as herein provided."

Other provisions sometimes included in non-cancellable policies are as follows:

"After the first twelve months of disability, no indemnity shall be payable for any period of disability during which the insured is not continuously within the United States (not including Alaska, the Panama Canal Zone or the insular possessions of the United States) unless a written permit to reside elsewhere be granted by the Company.

"Indemnity for disability will not be paid under this policy at a rate in excess of the average earnings of the insured for the period of time that he has been actually employed during the two years immediately preceding the commencement of the disability for which the Company is liable, and all premiums paid during said two years, for that portion of the disability indemnity in excess of the amount of such earnings, will be returned upon request of the insured. The insured shall have the right to reduce all or any of the indemnities of this policy on any anniversary of the date hereof and upon his request and temporary surrender of the policy for endorsement, the Company will endorse it, making such reduction of indemnities and a proportionate reduction in premium.

"At any time during the life of this policy, if the insured changes his occupation to one different from that stated in this policy, the Company hereby agrees upon the surrender of this policy to issue in lieu thereof upon the written request of the insured, a new policy containing the same provisions as this policy except a change in the amount of the benefits payable, the new policy to provide such an amount payable for disability as the premium paid for this policy will purchase at the rates but within the limits fixed by the Company for such different occupation.

"If the age of the insured has been misstated, any amount payable under this policy shall be that amount which the premium paid would have purchased at the rate fixed by the Company for the insured's correct age."

Where a non-cancellable policy is issued upon the aggregate disability benefit basis the premiums are quoted at a certain rate for each $1,000 of aggregate disability benefit and the policy then contains a clause of which the following is an example:

"AGGREGATE DISABILITY INDEMNITY—This indemnity shall be payable as it becomes due under the provisions of this policy in monthly installments of..... Dollars. Such Monthly Installments are hereinafter termed "Monthly Indemnity" and the total of all Monthly Indemnity payable on any one claim or payable in the aggregate on all claims arising under this policy shall not be greater than the said aggregate Disability Indemnity stated in policy. When the full amount has been paid on any one claim or in the aggregate on all claims arising under this policy no further Monthly Indemnity shall be payable and all insurance under policy shall terminate. Any premium paid for any further period of insurance will be returned to the insured upon request. All provisions for payment of Monthly Indemnity are subject to limit of Aggregate Disability Benefit as stated above."

XII. Standard Provisions

The standard provisions uniformly used are largely self-explanatory and require but little comment.

Standard provision No. 1 is designed to adjust the insurance in fair and proper relation to its cost if the insured changes his occupation and thereby changes the cost of his insurance. Premium rates for accident insurance are based upon the occupation just as definitely and just as necessarily as rates for life insurance

are based upon age, but many persons change their occupations after becoming insured and this provision merely sees to it that they shall continue to get their money's worth of insurance. Because policyholders when changing their occupation do not always think of their accident insurance or take steps to rearrange it, their interest requires that the policy thus provide for readjustment, if and when necessary, immediately, automatically and equitably.

Standard provision No. 2 is designed to protect both the insured and the company against unauthorized attempts to alter or waive the provisions of the policy and to prohibit either party from setting up verbal statements or outside understandings to the advantage or disadvantage of either.

Standard provision No. 3 fixes in advance the terms upon which the policy may be reinstated if premium is not paid when due and protects the company against attempts to reinstate a lapsed policy after an injury has been sustained or a sickness contracted.

Standard provisions Nos. 4, 5, 6 and 7 regulate the conditions that may be imposed upon a policyholder in perfecting a claim under a policy.

Standard provision No. 8 reserves to the company the right of medical examination in order to verify the facts as to injury or sickness for which claim is being made. It is a necessary measure for protection against attempts at fraud in occasional cases and it is a businesslike precaution to confirm the fact and the amount of liability in all cases. The right to an autopsy is, of course, intended to function only in those rare cases in which no other means exist for determining the fact as to the cause of death and consequently the liability of the company. Needless to say this right is exercised in only the rarest instances.

Standard provisions Nos. 9, 10 and 11 describe merely the mode of payment of indemnities due under the policy and leave with the insured the option of collecting in installments in case of prolonged disability.

Standard provision No. 12 is a method prescribed for meeting the situation when an insured changes his occupation to one of lesser hazard, in which case he might not only be entitled to a lower rate of premium but in some cases might be eligible for a different and more desirable form of insurance. The insured is

thus given the right to demand cancellation of his policy and to receive refund of unearned premium and to start over by applying for a new policy at such rate and of such form as may be suitable to the new circumstances.

Standard provision No. 13 requires no comment.

Standard provision No. 14 is designed to allow the company in disputed cases sufficient time for investigation and preparation and also to fix an ultimate date upon which the case may be considered closed, so that old cases may not be brought up after such an interval when evidence would no longer be available.

Standard provision No. 15 is intended to adjust the policy to any particular statutes relative to time of giving notice or furnishing proofs that may be found in different states.

Standard provision No. 16 reserves to the company the right to cancel the policy. This provision is often confused with the question of the company's right to refuse renewal upon expiration. The actual cancellation during the term of a policy is an action rarely taken and only when an insured is found to be wholly unsafe to deal with even for the balance of the policy term, as for example, when he is known to be engaged in criminal practices or nefarious dealings, or is found to have procured the policy by false and fraudulent representations, or is seeking to perpetrate a fraud upon the company. The right of the company to cancel or to refuse to renew is a measure of protection against ascertained moral hazard. It is availed of in both forms only to a small extent in actual practice, the best estimates indicating refusal to continue of from one-half to one per cent. of the policies. In particular cases it is an important protection to the company against repeated attempts at imposition and permits termination of relations with known malingerers. It also permits the termination of insurance in cases where policyholders retire from active business or cease to follow legitimate occupations and thereby remove the necessary and fundamental basis of all disability insurance, namely, the fact of an established occupation on which a claim for disability might be based. This provision is of course omitted from the non-cancellable forms of policies.

Standard provision No. 17 is included in some policies but not very commonly. Its purpose is to protect the company against over-insurance through the obtaining from other companies of

similar insurance to an amount in excess of that which the particular policyholder is legitimately entitled to carry.

Standard provision No. 18 is included in some policies and not in others. It is more likely to be found in monthly payment policies in order that premiums currently due may be deducted from the proceeds of a claim.

Standard provision No. 19 is very little used and is designed chiefly for the benefit of companies which permit the local issue of policies by agents or general agents and it is designed to protect the company against the obtaining of a number of policies in the same company through different agents or offices so that the company may, before receiving its reports, be engaged on a single risk in an amount that it would not willingly undertake.

XIII. Standard Provisions Laws

Standard provisions laws, identical with a form approved by the National Convention of Insurance Commissioners, or substantially so, have been enacted in some twenty-two states; similar laws, but with sufficient variations to necessitate printing special forms, exist in the state of Iowa and the Dominion of Canada, while Massachusetts requires the stipulation concerning charter, by-laws, etc., which is included in the "Special Provisions" clause, and also requires the "brief description" to be in 18 point instead of 14 point type.

These provisions relate to such subjects as change of occupation, alterations or waivers, past due premiums, notices and claims, medical examinations, payment of indemnities, rights of beneficiary, legal proceedings, compliance with special statutory enactments, all of which are mandatory; also cancellations, notice of other insurance, deduction of premiums from claims, limitation of aggregate amount of insurance, age limits, all of which are optional.

New York State

The standard provisions law of the state of New York, as a fair example of provisions enacted with an aim to uniformity, is as follows:

107. STANDARD PROVISIONS FOR ACCIDENT AND HEALTH POLICIES

Subdivision (a). On and after the first day of January, nineteen hundred and fourteen, no policy of insurance against loss or damage from the sickness, or the bodily injury or death of the insured by accident shall be issued or delivered to any person in this state by any corporation organized under article two of this chapter, or, if a foreign corporation, authorized to do business in this state, until a copy of the form thereof and of the classification of risks and the premium rates pertaining thereto have been filed with the superintendent of insurance; nor shall it be so issued or delivered until the expiration of thirty days after it has been so filed unless the said superintendent shall sooner give his written approval thereto. If the said superintendent shall notify, in writing, the company, corporation, association, society or other insurer which has filed such form that it does not comply with the requirements of law, specifying the reasons for his opinion, it shall be unlawful thereafter for any such insurer to issue any policy in such form. The action of the said superintendent in this regard shall be subject to review by any court of competent jurisdiction, provided, however, that nothing in this section shall be so construed as to give jurisdiction to any court not already having jurisdiction.

Subdivision (b). No such policy shall be so issued or delivered (1) unless the entire money and other considerations therefor are expressed in the policy; nor (2) unless the time at which the insurance thereunder takes effect and terminates is stated in a portion of the policy preceding its execution by the insurer; nor (3) if the policy purports to insure more than one person; nor (4) unless every printed portion thereof and of any endorsements or attached papers shall be plainly printed in type of which the face shall be not smaller than ten point; nor (5) unless a brief description thereof be printed on its first page and on its filing back in type of which the face shall be not smaller than 14 point; nor (6) unless the exceptions of the policy be printed with the same prominence as the benefits to which they apply, provided, however, that any portion of such policy which purports, by reason of the circumstances under which a loss is incurred, to reduce any indemnity promised therein to an amount less than

that provided for the same loss occurring under ordinary circumstances, shall be printed in bold face type and with greater prominence than any other portion of the text of the policy.

Subdivision (c). Every such policy so issued shall contain certain standard provisions, which shall be in the words and in the order hereinafter set forth and be preceded in every policy by the caption, "Standard Provisions." In each such standard provision wherever the word "insurer" is used, there shall be substituted therefor "company" or "corporation" or "association" or "society" or such other word as will properly designate the insurer. Said standard provisions shall be:

(1) A standard provision relative to the contract which may be in either of the following two forms: Form (A) to be used in policies which do not provide for reduction of indemnity on account of change of occupation, and Form (B) to be used in policies which do so provide. If Form (B) is used and the policy provides indemnity against loss from sickness, the words "or contracts sickness" may be inserted therein immediately after the words "in the event that the insured is injured."

(A): 1. This policy includes the endorsements and attached papers, if any, and contains the entire contract of insurance. No reduction shall be made in any indemnity herein provided by reason of change in the occupation of the insured or by reason of his doing any act or thing pertaining to any other occupation.

(B): 1. This policy includes the endorsements and attached papers, if any, and contains the entire contract of insurance except as it may be modified by the insurer's classification of risks and premium rates in the event that the insured is injured after having changed his occupation to one classified by the insurer as more hazardous than that stated in the policy, or while he is doing any act or thing pertaining to any occupation so classified, except ordinary duties about his residence or while engaged in recreation, in which event the insurer will pay only such portion of the indemnities provided in the policy as the premium paid would have purchased at the rate but within the limits so fixed by the insurer for such more hazardous occupation.

If the law of the state in which the insured resides at the time this policy is issued requires that prior to its issue a statement of the premium rates and classification of risks pertaining to it shall

be filed with the state official having supervision of insurance in such state, then the premium rates and classification of risks mentioned in this policy shall mean only such as have been last filed by the insurer in accordance with such law, but if such filing is not required by such law then they shall mean the insurer's premium rates and classification of risks last made effective by it in such state prior to the occurrence of the loss for which the insurer is liable.

(2) A standard provision relative to changes in the contract, which shall be in the following form:

2. No statement made by the applicant for insurance not included herein shall avoid the policy or be used in any legal proceeding hereunder. No agent has authority to change this policy or to waive any of its provisions. No change in this policy shall be valid unless approved by an executive officer of the insurer and such approval be endorsed hereon.

(3) A standard provision relative to reinstatement of policy after lapse which may be in either of the three following forms: Form (A) to be used in policies which insure only against loss from accident; Form (B) to be used in policies which insure only against loss from sickness; and form (C) to be used in policies which insure against loss from both accident and sickness.

(A): 3. If default be made in the payment of the agreed premium for this policy, the subsequent acceptance of a premium by the insurer or by any of its duly authorized agents shall reinstate the policy, but only to cover loss resulting from accidental injury thereafter sustained.

(B): 3. If default be made in the payment of the agreed premium for this policy, the subsequent acceptance of a premium by the insurer or by any of its duly authorized agents shall reinstate the policy but only to cover such sickness as may begin more than ten days after the date of such acceptance.

(C): 3. If default be made in the payment of the agreed premium for this policy, the subsequent acceptance of a premium by the insurer or by any of its duly authorized agents shall reinstate the policy but only to cover accidental injury thereafter sustained and such sickness as may begin more than ten days after the date of such acceptance.

(4) A standard provision relative to time of notice of claim

which may be in either of the three following forms: Form (A) to be used in policies which insure only against loss from accident; Form (B) to be used in policies which insure only against loss from sickness, and Form (C) to be used in policies which insure against loss from both accident and sickness. If Form (A) or Form (C) is used the insurer may at its option add thereto the following sentence "In event of accidental death immediate notice thereof must be given to the insurer."

(A): 4. Written notice of injury on which claim may be based must be given to the insurer within twenty days after the date of the accident causing such injury.

(B): 4. Written notice of sickness on which claim may be based must be given to the insurer within ten days after the commencement of the disability from such sickness.

(C): 4. Written notice of injury or of sickness on which claim may be based must be given to the insurer within twenty days after the date of the accident causing such injury or within ten days after the commencement of disability from such sickness.

(5) A standard provision relative to sufficiency of notice of claim which shall be in the following form and in which the insurer shall insert in the blank space such office and its location as it may desire to designate for such purpose of notice.

5. Such notice given by or in behalf of the insured or beneficiary, as the case may be to the insurer at.....or to any authorized agent of the insurer, with particulars sufficient to identify the insured, shall be deemed to be notice to the insurer. Failure to give notice within the time provided in this policy shall not invalidate any claim if it shall be shown not to have been reasonably possible to give such notice and that notice was given as soon as was reasonably possible.

(6) A standard provision relative to furnishing forms for the convenience of the insured in submitting proof of loss as follows:

6. The insurer upon receipt of such notice, will furnish to the claimant such forms as are usually furnished by it for filing proofs of loss. If such forms are not so furnished within fifteen days after the receipt of such notice, the claimant shall be deemed to have complied with the requirements of this policy as to proof of loss upon submitting within the time fixed in the policy for

filing proofs of loss, written proof covering the occurrence, character and extent of the loss for which claim is made.

(7) A standard provision relative to filing proof of loss which shall be in such one of the following forms as may be appropriate to the indemnities provided:

(A): 7. Affirmative proof of loss must be furnished to the insurer at its said office within ninety days after the date of the loss for which claim is made.

(B): 7. Affirmative proof of loss must be furnished to the insurer at its said office within ninety days after the termination of the period of disability for which the company is liable.

(C): 7. Affirmative proof of loss must be furnished to the insurer at its said office in case of claim for loss of time from disability within ninety days after the termination of the period for which the insurer is liable, and in case of claim for any other loss, within ninety days after the date of such loss.

(8) A standard provision relative to examination of the person of the insured and relative to autopsy which shall be in the following form:

8. The insurer shall have the right and opportunity to examine the person of the insured when and so often as it may reasonably require during the pendency of claim hereunder, and also the right and opportunity to make an autopsy in case of death where it is not forbidden by law.

(9) A standard provision relative to the time within which payments other than those for loss of time on account of disability shall be made, which provision may be in either of the following two forms and which may be omitted from any policy providing only indemnity for loss of time on account of disability. The insurer shall insert in the blank space either the word "immediately" or appropriate language to designate such period of time, not more than sixty days, as it may desire; Form (A) to be used in policies which do not provide indemnity for loss of time on account of disability and Form (B) to be used in policies which do so provide.

(A): 9. All indemnities provided in this policy will be paid .....after receipt of due proof.

(B): 9. All indemnities provided in this policy for loss other than that of time on account of disability will be paid..... after receipt of due proof.

(10) A standard provision relative to periodical payments of indemnity for loss of time on account of disability, which provision shall be in the following form, and which may be omitted from any policy not providing for such indemnity. The insurer shall insert in the first blank space of the form appropriate language to designate the proportion of accrued indemnity it may desire to pay, which proportion may be all or any part not less than one-half, and in the second blank space shall insert any period of time not exceeding sixty days:

10. Upon request of the insured and subject to due proof of loss.....accrued indemnity for loss of time on account of disability will be paid at the expiration of each..... during the continuance of the period for which the insurer is liable, and any balance remaining unpaid at the termination of such period will be paid immediately upon receipt of due proof.

(11) A standard provision relative to indemnity payments which may be in either of the two following forms: Form (A) to be used in policies which designate a beneficiary, and Form (B) to be used in policies which do not designate any beneficiary other than the insured.

(A): 11. Indemnity for loss of life of the insured is payable to the beneficiary if surviving the insured, and otherwise to the estate of the insured. All other indemnities of this policy are payable to the insured.

(B): 11. All the indemnities of this policy are payable to the insured.

(12) A standard provision providing for cancellation of the policy at the instance of the insured which shall be in the following form:

12. If the insured shall at any time change his occupation to one classified by the insurer as less hazardous than that stated in the policy, the insurer, upon written request of the insured and surrender of the policy will cancel the same and will return to the insured the unearned premium.

(13) A standard provision relative to the rights of the bene-

ficiary under the policy which shall be in the following form and which may be omitted from any policy not designating a beneficiary.

13. Consent of the beneficiary shall not be requisite to surrender or assignment of this policy, or to change of beneficiary, or to any other changes in the policy.

(14) A standard provision limiting the time within which suit may be brought upon the policy as follows:

14. No action at law or in equity shall be brought to recover on this policy prior to the expiration of sixty days after proof of loss has been filed in accordance with the requirements of this policy, nor shall such action be brought at all unless brought within two years from the expiration of the time within which proof of loss is required by the policy.

(15) A standard provision relative to time limitations of the policy as follows:

15. If any time limitation of this policy with respect to giving notice of claim or furnishing proof of loss is less than that permitted by the law of the state in which the insured resides at the time this policy is issued, such limitation is hereby extended to agree with the minimum period permitted by such law.

Subd. (d). No such policy shall be so issued or delivered which contains any provision (1) relative to cancellation at the instance of the insurer; or, (2) limiting the amount of indemnity to a sum less than the amount stated in the policy and for which the premium has been paid; or, (3) providing for the deduction of any premium from the amount paid in settlement of claim or, (4) relative to other insurance by the same insurer; or, (5) relative to the age limits of the policy; unless such provisions which are hereby designated as optional standard provisions, shall be in the words and in the order in which they are hereinafter set forth, but the insurer may at its option omit from the policy any such optional standard provision. Such optional standard provisions if inserted in the policy shall immediately succeed the standard provisions named in subdivision (c) of this section.

(1) An optional standard provision relative to cancellation of the policy at the instance of the insurer as follows:

16. The insurer may cancel this policy at any time by written

notice delivered to the insured or mailed to his last address, as shown by the records of the insurer, together with cash or the insurer's check for the unearned portion of the premium actually paid by the insured, and such cancellation shall be without prejudice to any claim originating prior thereto.

(2) An optional standard provision relative to reduction of the amount of indemnity to a sum less than that stated in the policy as follows:

17. If the insured shall carry with another company, corporation, association or society other insurance covering the same loss without giving written notice to the insurer, then in that case the insurer shall be liable only for such portion of the indemnity promised as the said indemnity bears to the total amount of like indemnity in all policies covering such loss, and for the return of such part of the premium paid as shall exceed the pro rata for the indemnity thus determined.

(3) An optional standard provision relative to deduction of premium upon settlement of claim as follows:

18. Upon the payment of claim hereunder any premium then due and unpaid or covered by any note or written order may be deducted therefrom.

(4) An optional standard provision relative to other insurance by the same insurer which shall be in such one of the following forms as may be appropriate to the indemnities provided, and in the blank spaces of which the insurer shall insert such upward limits of indemnity as are specified by the insurers' classification of risks, filed as required by this section.

(A): 19. If a like policy or policies, previously issued by the insurer to the insured be in force concurrently herewith, making the aggregate indemnity in excess of $....., the excess insurance shall be void and all premiums paid for such excess shall be returned to the insured.

(B): 19. If a like policy or policies, previously issued by the insurer to the insured be in force concurrently herewith, making the aggregate indemnity for loss of time on account of disability in excess of $..... weekly, the excess insurance shall be void and all premiums paid for such excess shall be returned to the insured.

(C): 19. If a like policy or policies, previously issued by the insurer to the insured be in force concurrently herewith, making the aggregate indemnity for loss other than that of time on account of disability in excess of $....., or the aggregate indemnity for loss of time on account of disability in excess of $..... weekly, the excess insurance of either kind shall be void and all premiums paid for such excess shall be returned to the insured.

(5) An optional standard provision relative to the age limits of the policy which shall be in the following form and in the blank spaces of which the insurer shall insert such number of years as it may elect:

20. The insurance under this policy shall not cover any person under the age of ..... years nor over the age of ..... years. Any premium paid to the insurer for any period not covered by this policy will be returned upon request.

Subd. (e). No such policy shall be so issued or delivered if it contains any provision contradictory, in whole or part, of any of the provisions hereinbefore in this section designated as "Standard Provisions" or as "Optional Standard Provisions"; nor shall any endorsements or attached papers vary, alter, extend, be used as a substitute for, or in any way conflict with any of the said "Standard Provisions" or the said "Optional Standard Provisions"; nor shall such policy be so issued or delivered if it contains any provision purporting to make any portion of the charter, constitution or by-laws of the insurer a part of the policy unless such portion of the charter, constitution or by-laws shall be set forth in full in the policy, but this prohibition shall not be deemed to apply to any statement of rates or classification of risks filed with the Superintendent of insurance in accordance with the provisions of this section.

Subd. (f). The falsity of any statement in the application for any policy covered by this section shall not bar the right to recovery thereunder unless such false statement was made with actual intent to deceive or unless it materially affected either the acceptance of the risk or the hazard assumed by the insurer.

Subd. (g). The acknowledgment by an insurer of the receipt of notice given under any policy covered by this section, or the

furnishing of forms for filing proofs of loss, or the acceptance of such proofs, or the investigation of any claim thereunder shall not operate as a waiver of any of the rights of the insurer in defense of any claim arising under such policy.

Subd. (h). No alteration of any written application for insurance by erasure, insertion or otherwise, shall be made by any person other than the applicant without his written consent, and the making of any such alteration without the consent of the applicant shall be a misdemeanor. If such alteration shall be made by any officer of the insurer, or by any employee of the insurer with the insurer's knowledge or consent, then such act shall be deemed to have been performed by the insurer thereafter issuing the policy upon such altered application.

Subd. (i). A policy issued in violation of this section shall be held valid but shall be construed as provided in this section and when any provision in such a policy is in conflict with any provision of this section, the rights, duties and obligations of the insurer, the policyholder and the beneficiary shall be governed by the provisions of this section.

Subd. (j). The policies of insurance against accidental bodily injury or sickness issued by an insurer not organized under the laws of this state may contain, when issued in this state, any provision which the law of the state, territory or district of the United States under which the insurer is organized, prescribes for insertion in such policies, and the policies of insurance against accidental bodily injury or sickness issued by an insurer organized under the laws of this state may contain, when issued or delivered in any other state, territory, district or country, any provision required by the laws of the state, territory, district or country in which the same are issued, anything in this section to the contrary notwithstanding.

Subd. (k). (1) Nothing in this section, however, shall apply to or affect any policy of liability or workmen's compensation insurance or any general or blanket policy of insurance issued to any municipal corporation or department thereof, or to any employer whether a corporation, copartnership, association or individual, or to any police or fire department, underwriters' corps, salvage bureau, or to any association of fifty or more members having a

constitution or by-laws and formed in good faith for purposes other than that of obtaining insurance where not less than seventy-five percentum of the members or employees are insured for their individual benefit against specified accidental bodily injuries or sickness while exposed to the hazards of the occupation or otherwise in consideration of a premium intended to cover the risks of all the persons insured under such policy.

(2) Nothing in this section shall apply to or in any way affect contracts supplemental to contracts of life or endowment insurance where such supplemental contracts contain no provisions except such as operate to safeguard such insurance against lapse or to provide a special surrender value therefor in the event that the insured shall be totally and permanently disabled by reason of accidental bodily injury or by sickness; provided that no such supplemental contract shall be issued or delivered to any person in this state unless and until a copy of the form thereof has been submitted to and approved by the superintendent of insurance, under such reasonable rules and regulations as he shall make concerning the provisions in such contracts and their submission to and approval by him.

(3) Nothing in this section shall apply to or in any way affect fraternal benefit societies.

(4) The provisions of this section contained in clause (5) of subdivision (b) and clauses (2), (3), (8) and (12) of subdivision (c) may be omitted from railroad ticket policies sold only at railroad stations, or at railroad ticket offices by railroad employees.

Subd. (l). Any company, corporation, association, society or other insurer or any officer or agent thereof, which or who issues or delivers to any person in this state any policy in willful violation of the provisions of this section shall be punished by a fine of not more than five hundred dollars for each offense, and the superintendent of insurance may revoke the license of any company, corporation, association, society or other insurer of another state or country, or of the agent thereof, which or who willfully violates any provision of this section.

Subd. (m). The term "indemnity" as used in this section means benefits promised.

108. DISCRIMINATIONS UNDER ACCIDENT OR HEALTH POLICIES PROHIBITED

No insurance corporation authorized to make insurance in this state under subdivision two or section seventy of this chapter, nor any agent of such corporation, shall make or permit any discrimination between individuals of the same class in the amount of premiums, policy fees, or rates charged for any policy of accident or health insurance, or in the benefits payable thereunder, or in any of the terms or conditions of such insurance contract, or in any other manner whatsoever. Any person or corporation violating any provision of this section shall be guilty of a misdemeanor, and shall forfeit to the people of the state the sum of five hundred dollars for each such violation.

XIV. Commentary

Let us pause to repeat and to answer briefly a few questions occasionally asked. Is an accident and health policy, or particularly an accident policy, a "technical" contract? Is the business of accident and health insurance a business of technicalities? Why not "scrap" all these conditions, provisos, points of law and other causes of dispute and just apply the theory that "the customer always is right" and "make him satisfied"?

That "the customer is right" is a rule perhaps applicable within rather wide limits in merchandising transactions, for the complaining customer usually wants only to return goods purchased or to have them perfected if need be. But when the dealings are in money the situation changes. No one ever heard of a bank agreeing that a customer is right when he deposits dollars and expects to check out hundreds or thousands, and insurance is a very similar transaction, for it involves the deposit of a stipulated premium and the right to withdraw a stipulated benefit under stipulated circumstances.

The true facts are that such policies are no more "technical" than any written contract is bound to be if it is to agree to do certain things in return for a certain consideration; that, at least in present-day practice, more technicalities are offered by policyholders seeking to collect unjustified claims than are conceived

by companies in opposing them; but that the vast majority of claims made under such policies are honest, are promptly and fairly dealt with and the customers are satisfied.

In every-day operation claim adjusters find no technicalities, or look past them to the merits of the claims, and it is rare indeed that anything in the nature of a technical defense is advanced unless to support justified resistance of an unrighteous claim. Not "must we pay" but "should we pay" is the rule and guide to action, failure to comply with technical requirements of the policy is daily overlooked, claims omitting to include collateral benefits of which the claimants are unaware are added to in accord with the right, the benefit of doubt within reason is quite generally given the insured and even a moderate amount of aggression submitted to in the effort to give satisfaction, while the number of disputes is exceedingly small in proportion to the number of claims paid and litigations so few as to be hardly calculable in terms of percentage.

But the actual price of insurance to the honest man is but the sum of the calculable cost of the thing bought and the incalculable cost of the impositions that may be permitted to be practiced by the dishonest or predatory. It is to the interest of the fair dealing majority that reasonable precautions be taken against the machinations of an unscrupulous minority, as well as against distortions of the contract by means of legalistic subtleties or sophistries, and it is imperative that a policy be constructed in the light of the precedents that have been set up, the pitfalls that have been met, the hazards that attend litigation with a document in any respect loose, uncertain or susceptible of forced interpretation.

PROCEDURE IN THE EXAMINATION OF CASUALTY COMPANIES BY INSURANCE DEPARTMENTS

BY

EMMA C. MAYCRINK

Before describing the routine of examination of the companies, it is pertinent to review briefly the genesis of state supervision of insurance corporations by insurance departments. The general requirements laid down by law antedate the business of casualty insurance. In fact, the most important of these laws in some states antedate the formation of insurance departments.

In the commonwealth of Massachusetts, one of the earliest acts was a resolve of 1807 by which insurance companies were required to render an account of their affairs to the next general court. By an act of 1818 all insurance companies thereafter incorporated were required to publish annually certain details of their business, and whenever so directed, to make statements of their affairs to the legislature, and submit to examination under oath concerning such statements. An act of 1827 required foreign companies to deposit copies of their charters and of the powers of attorney furnished their agents with the treasurer of the commonwealth, and to make reports and publications similar to those required of domestic companies. An act of 1836 authorized insurance companies to invest their funds in certain stocks. Therefore, the act of March 31, 1855 establishing an insurance department laid no new requirements upon the companies, but provided for examinations by the commissioners, to ascertain if they were solvent and were conducting their business according to law. One of the duties of the commissioners was to initiate legal proceedings against companies whose operations were deemed hazardous to the public, and to report to the secretary of the commonwealth the general conduct and condition of the companies and any violations of law discovered.

In New York State the insurance department was established by an act of April 15, 1859, but prior to that time there were certain definite requirements. Under the revised statute of 1828 all moneyed corporations afterward created were required to make annual reports to the comptroller of the state "in the form

prescribed by him." Charters were obtained direct from the legislature before 1846 but the constitution then provided that companies should thereafter be organized under the general laws. In the general insurance law of 1849 the minimum amount of capital stock was prescribed as were the securities in which a company might invest, and the limitation upon investment in real estate. In 1851, deposit of securities was provided for and finally an act authorized the comptroller to make examinations of domestic companies and provided for their dissolution if their assets were found insufficient to reinsure their risks. There was a legislative provision for a form for annual reports, such reports to be open to public inspection and investigation. Tabulation of these reports for printing and their submission to the legislature were prescribed. Other state departments were organized and requirements were somewhat broadened to include that of prompt payment of all claims and judgments. The above *résumé* of legal requisites was given in a paper read before the 33rd National Convention of Insurance Officials in 1902. In that paper also is a quotation from one of the former commissioners of Massachusetts reviewing insurance from 1856 to 1876:

"The unprecedented expansion of the business, the magnitude of the interests involved, and the frequent and inevitable exposure of the people to imposition and fraud under a speculative and corrupt management, demanded:

First: The enactment of laws specially designed for its regulation, and for the protection of policyholders.

Second: An energetic and effective system of supervision and registration of all corporate institutions transacting such business within the commonwealth, which should bring under rigid scrutiny an annual exhibit of their financial status.

Third: The establishment of a distinct executive department charged exclusively with the execution of such laws, and with the service of supervising, examining and reporting the condition of all insurance companies authorized within the state."

Thus, almost a century ago we had practically all of the essential elements of supervision. The state having granted charters of insurance, the companies were regarded as creatures of the state which were to serve the people in a fiduciary capacity; and

the state became responsible to the people for the safe conduct of the companies' affairs. The initial requirements concerned correct accounts, first of capital and the invested assets; later, laws were made relating to liabilities, particularly deferred liabilities. The state became interested in the solvency of companies and the prompt payment of claims; and above all recognized the necessity and value of making accessible to the public the audited reports and examinations made in the course of departmental supervision. The use of companies' statements as a means of checking tax levies was essential but no more important than the necessity for correct accounting of funds collected as premiums to be paid to policyholders when claims became due. At the present time, there is nothing new in principle but there have been changes in method.

The laws of the states at present differ in defining the power conferred upon the insurance commissioner to examine companies, but in general, provision is made in most states for the inspection of books, papers and securities with the added provision of oral questioning of the company's officers and agents under oath, if necessary, by the superintendent, his deputies or other duly authorized persons. In most cases the expense of examination is borne by the companies, although in some states, notably Massachusetts, the state bears the cost except certain traveling and similar expenses. The penalty for refusal to subject to examination is generally the revocation of the company's license to do business in the state.

The National Convention of Insurance Commissioners endeavors by means of a standing committee to lessen the burden of too frequent examinations. This committee acts as a sort of clearing house on examination of companies. When an examination is desired the request is made to the company's home state or several states are invited to participate instead of the former method of having each state make a separate examination.

When a state has a large insurance department and regularly examines its domestic companies, the difficulty of too frequent examinations is avoided. The remainder of this paper will follow the practice of one such state, New York, except where that of another state is specifically mentioned.

Examinations may be ordered by the Superintendent of Insurance for many reasons. They are in addition to the routine

examinations, principally, examination on organization, changes in capital stock, transfer of capital stock to surplus and special investigations of assets or liabilites when the superintendent deems such investigation to be expedient.

In outlining the procedure of examination, this paper will follow the routine examination of a domestic stock casualty company which by statute is required once every three years.

A large part of the work of examination is the reconciliation of the items as reported by the company in the financial statement given in its annual report as of December 31st, or the intervening summaries as given in the quarterly reports. As a matter of convenience, the majority of examinations are as of the last day of the year, but in some cases intervening dates are used. The report of examination consists largely of setting forth the financial statement of the company in practically the same order as given in the blank which is required for the annual report. This statement is what is known as the convention blank, has been standardized by the Committee on Blanks of the National Convention of Insurance Commissioners and serves a most useful purpose in providing statistical reports and comparisons. The verification of each of the items of the statement with the company's books and records proves the statement which has been filed. While reports of this kind may be dull reading, it would seem that a periodical confirmation of companies' reports is of the utmost value. In New Jersey a narrative report is usually made, but this is after all a matter of set up. While that form may be more attractive and readable to policyholders, however, the financial statement is an official verified record and as such seems to be a satisfactory instrument for the determination of surplus and comparison to be used in the supervision of companies and by companies themselves for statistical purposes.

In order to avoid repetitious details, reference is made here to two papers written by Mr. Tarbell and printed in the *Proceedings* of this Society. The first, ("Casualty Insurance Accounting and the Annual Statement Blank," *Proceedings,* Vol. XV, page 141) reproduces the statement items of income, disbursement, assets and liabilities, as well as the underwriting and investment of the convention blank for stock casualty companies; and the second paper ("Exhibits and Schedules of the Casualty Annual Statement Blank," *Proceedings,* Vol. XVI, page

131) contains reproductions of the important schedules of the blank. Mr. Tarbell has thoroughly discussed each item of the blank and the schedules which supplement them. It will therefore be assumed that the general plan of financial statements and the relation of the various items therein are known and understood and comments will be confined to features which are brought out in the examiner's actual verification of the statements with the books and records of the company.

While the examiner has a distinct advantage in point of time and in having the complete operations of the company under scrutiny, there is difficulty presented by the manner in which some companies' books and records are kept. Some company offices originated from foreign ownership and bookkeeping methods had to be adapted to business in this country. Companies formerly doing one line business, experience difficulty in setting up accounts for the multiple lines. While some companies follow the ledger accounts needed for the convention blank, others have multifarious accounts which must be grouped for presentation in the report. In following through the procedure of examination, the sequence of the items in the report will be used, although in actual practice the verification of these items will progress more or less simultaneously.

After citing authority for examination by appointment number, the history of the company is given in the report, particularly, the date of organization and changes, if any, in capital stock. The charter and by-laws are examined in order to make sure that the company is first: transacting only those lines of business set forth in its original charter, or subsequent amendments thereof, and second: that the company has sufficient amount of capital stock required by statute in order to transact any and all lines of business shown on the company's books. Later, a check is made of the capital assets to find if the required amount of capital has been invested in accordance with the law.

The stockholders' list is examined in order to determine ownership and control. Transfers of stock are checked and the certification of the fiscal agent is examined. The list of the board of directors is noted particularly as to the amount of stock owned by directors and officers, and as to compliance with the legal provisions governing number of directors and state residence, and also that directors own qualifying shares as stated in the by-laws.

A trial balance is taken from the general ledger and the items are grouped to make up the financial statement in the convention blank. The trial balance not only evidences whether or not the books are in balance, but also reflects unusual items in the companies' accounts which may call for explanation.

The minutes of the board of directors are read for changes in the companies' investment or underwriting policy or management. In so far as is possible, a detailed check is made of each item of the financial statement, not only to the ledger accounts, but to the books of original entry and statistical records. It may be said here that with the increasing volume of business, and because of the multiple lines of business, each constituting a company within a company, the statistical departments of casualty companies are relied upon to a great extent to furnish and substantiate the figures of the report.

The income statement presents no particular difficulty since it reflects the increase in ledger assets over the preceding period, viz: the ledger balance at the end of the previous year when the examination is made as of December 31. The income may be analyzed as received from three sources, premiums, interest on investments and increases in book value of assets or profits received from sale of assets.

You are familiar with the anomaly presented by the blank which is presumed to show income and disbursements on a cash basis. The gross premiums, however, called for by lines of insurance are on a written basis which gives rise to agents' balances in the company's assets. This is well understood by those handling insurance companies' accounts, but might be confusing to one familiar only with commercial accounts. The gross premiums written with the deductions for cancelled, not taken policies and reinsurance are reconciled with the books and afterwards are carefully listed by lines to determine the unearned premium to be set up as a liability. Interest received is usually checked with the schedules of real estate, bonds and mortgages. Other income items such as agents' balances previously charged off are checked from the accounts.

The disbursements reflect payments to policyholders for losses from which are deducted salvage items received thereon. Investigation and claim settlement expenses are set up by lines as well as the losses and are considered part of the losses. Commissions

are also checked with premiums written by lines of insurance to determine whether or not the company is keeping within the rates of commission in the agreements covering acquisition cost. Since no credit is allowed in assets for stationery or fixtures, companies usually charge off all expenditures of this kind through disbursements. Miscellaneous items of expense are carefully scrutinized and should be checked with proper vouchers. If they appear large or unusual, they are questioned. Dividends paid during the year are checked and compared with previous years. Items of borrowed money are required to be shown gross both in income and disbursements. Such items are noted in the report.

Investment expenses are related to the type of investment. Usually only those pertaining to real estate require large outlays. The remaining items of disbursements are the adjustments in assets, whether by adjustment in book value or losses shown on sale of assets. The total amount of income over the total amount of disbursements added to the ledger assets of the previous year must agree with the total ledger assets of the year of statement.

Having verified changes in ledger assets from the preceding year by means of verifying the items of income and disbursements, each item of assets is carefully checked when possible by physical examination of the assets claimed and by determining the value from the most reliable and expert source, using the following procedure.

On the date following that which is to be the date of the examination report, the examiners visit the company's office and the cash on hand is verified by actual count. All other items included in the company's cash in office are carefully scrutinized for irregularities, no items being allowed unless the company shows actual value for each amount. At the same time a form letter is sent to all banks in which the company has accounts for verification as to cash in banks as of date of examination.

The bank statements call for information as to whether or not the cash is the absolute property of the company and is not in any way held as security for loans to company officers or others. The amount of cash on deposit is compared with the volume of business. Large deposits, particularly those without interest, are questioned.

As soon as the company to be examined has balanced its uncol-

lected premiums the examiners go over these accounts by agents in order to determine the amount which will be allowed as assets. Those under 90 days are allowed and the overdues are deducted as assets not admitted. This verification of agents' accounts is often time-consuming, particularly in some of the newly admitted or in badly managed companies where no real system has been adopted for applying agents' credits, reinsurance and return premiums. Some of these items cancel the debits and if an adequate way of handling the accounts has not been worked out, it is difficult to balance them. In some cases the examiners are compelled to build up the entire amount to be allowed as an asset.

In other companies where the volume of business is actually greater, Hollerith punch cards are used or even where adding machine tapes show the complete run of the accounts, the work is considerably shortened. The clerks have a definite number of agents' accounts which they balance and they can explain the application of credits. In such cases it is sufficient to check only the underdue items which are to be allowed as assets and test check the remaining balances.

After the cash in office and agents' balances are determined, the invested assets are checked. If the company owns real estate, it is usually acquired for home office purposes or has been taken over after a mortgage has been foreclosed. In the case of fidelity and surety companies, real estate is sometimes received as salvage on losses paid. The holding of real estate with the exception of home office or branch office properties is limited by law and must be sold within a stated time unless an extension of time has been granted by the superintendent of insurance. Each parcel is checked for compliance with this requirement.

Large holdings of real estate are given to an appraiser for valuation. Appraisal is sometimes waived if there has been no radical change in values where the property is located and a previous appraisal can be used.

Real estate mortgage loans are verified as to proper recording and insurance on buildings; and to make sure that all the necessary papers for a bona fide mortgage are in the company's possession. Appraisals are made in the case of large loans and newly made mortgages to determine whether the market value is sufficient in accordance with the statutory provision, particularly to make certain that the mortgage is a first lien on improved prop-

erty and that the value of the property is at least fifty per cent. in excess of the amount loaned thereon. The examiner also must make sure that interest is being received and note which properties, if any, are in foreclosure.

Bonds and stocks which make up the major proportion of casualty companies' assets are counted in the vaults of the company and verified with the company's schedule of securities. If the examination is as of December 31st, the quotations given in the Book of Valuations of securities owned or loaned on, which is issued annually under the auspices of the National Convention of Insurance Commissioners, are applied to the par values of the company's bonds and to the number of shares of stock in order to establish a market value. If the examination is as of some date other than the end of the year, valuations are brought down to date. If the total market value of securities is in excess of the book value, the excess is carried as a non-ledger account. Conversely, if the book value carried in the company's ledger assets is in excess of the department's market value, this excess is carried as an asset not admitted. In other words, no change is made in the company's book values whether of real estate or securities. Market values, however, are determined and the market values are used in the determination of the asset value. This puts the companies upon a uniform basis so that a comparison of companies is made possible.

While the insurance law governing investments for casualty companies is much broader than for life companies, solvency of the companies issuing being the only criterion for bonds and stocks other than those required for capital investment, there are restrictions with regard to ownership of the company's own stock, which if taken credit for must be deducted as an asset not admitted. Investment in stocks of insurance companies doing the same class of business is also limited. A recent amendment to Section 16 of the New York law prohibits the investment of more than 10 per cent. of the company's assets in securities of one institution. This does not apply to the stock of insurance corporations.

When insurance company stocks are held, instead of using market quotations, actual sales, etc., as in the case of the other securities quoted in the book of valuations, the capital stock and the company's surplus after audit or examination by the depart-

ment in relation to the number of shares outstanding is used to determine the value of a share. Care is taken to see that interest is received on bonds and that none are in default.

As a rule holdings of collateral loans are not proportionately large. All such loans are scrutinized, particularly those made and paid off during the year, first, to determine if interest has been received and that the market value of collateral securities is sufficient to cover the loan, and second, to determine whether or not loans were made to directors or officers of the company or those pecuniarily interested in the company. Such loans are in conflict with the law.

Miscellaneous assets are examined and unless the company can show intrinsic value are deducted as not admitted.

The non-ledger assets consist principally of rent, interest or dividends due and accrued and the market value of real estate or stocks and bonds over book value. These amounts are easily verified with the proper schedules. The total amount of non-ledger assets is added to the ledger assets. From this sum, assets which are not admitted, such as agents' balances overdue, furniture and fixtures, company stock, etc., are deducted.

Having determined the total assets admitted by actual physical examination and valuation as described above, the final and perhaps most difficult phase of the examination is the estimation of the company's liabilities. The largest part of the liabilities are usually the amounts due policyholders, first, the unearned premium and, second, the unpaid losses. These reserves are legal requirements.

Although the convention blank allows the fifty per cent. method in computing the unearned premium reserve, the examiner sets up as a liability the unexpired portions of the net premiums by using the month and year of issue. This method uses the mid-month instead of the mid-year for the fractions representing the expirations. The method used in the blank produces practically the same amount of reserve when the company's business is evenly distributed over the year.

The monthly expiration method is more accurate in the case of a rapidly expanding business or when business falls off at the end of the year. Where the amount in the examiner's report differs from the unearned shown in the company's annual statement, this difference is explained in the report of examination. There may

be differences also due to deductions for reinsurance premiums due from companies not admitted to do business in the state. The law forbids any allowance for reinsurance in not admitted companies, either as a credit in assets or a deduction from liabilities.

The computation of the premiums in force and the unearned thereon is a laborious one and some of the companies are now using Hollerith cards for the preparation of this item. The written premiums, cancelled and returned premiums, and the reinsurance premiums can easily be run off by month and year of issue. This method results in a saving of time both for company offices and for examiners. The liability as finally determined represents not only the amount of premiums not yet "earned" and therefore the amount returnable for each individual risk if cancelled by the company, but in toto, it is sometimes termed the "reinsurance reserve."

In estimating the liability for losses due policyholders, the problem is more complex. Indeed, with the growing volume of business and the many lines included in casualty insurance, the determination of proper estimates for losses is the most laborious and exacting feature of most examinations. Without going into too great detail as to the various methods used in arriving at the amount of this liability, some general principles may be cited.

The examiner has the advantage over the company in that the reported losses are reviewed some time after the date of statement and the date of examination. Where the actual losses are known soon after the time they are reported and are paid off promptly, the examiner uses the actual payments as the reserve. The usual practice is to have companies run off a list of the losses which were reported as of date of statement showing all payments thereon up to the time they are called for by the examiner and all company estimates as of date of statement. This is done preferably by means of the Hollerith printer-tabulator when the companies have the punch card system, or by similar lists where the printed sheets cannot be supplied.

These lists are first checked for missing claims and all claims open at the time of the previous examination must be shown as paid or legitimately closed without payment. All new claims must be accounted for. The payments made subsequent to

examination date are compared with the company's original estimate. The ratio of the amount paid to company estimates is a valuable indication in judging the adequacy of company estimates on claims still open.

The lines where losses are soon known are plate glass, burglary and theft, steam boiler and machinery. The reserves on the outstandings can soon be determined with reasonable accuracy. Accident and health claims are valued and with the exception of claims on non-cancellable policies do not present any great difficulty. In most companies the volume of non-cancellable business is not large as compared with other lines. Tabular values may be used for the reserves and from one periodical examination to another these values may be compared for adequacy.

The determination of reserves for fidelity and surety claims, workmen's compensation claims and those for the various automobile coverages, also liability other than auto, require more time, not only because these lines are written in larger volume, but because the estimate of these deferred liabilities is complicated by legal phases which differ between states and the liability may extend over a period of years before the claims are finally paid or can be marked closed.

In the case of fidelity including forgery and of surety bonds there are many small claims which may be easily determined, but there are often large contracts and other surety obligations where litigation is extensive or where the surety company is compelled to take over and complete the contract. In the estimate of liability the expense item is apt to prove material and must be estimated in addition to the liability for losses. On the other hand, salvage received on open cases must be allowed. One method is to value these cases gross as to salvage and then allow all amounts received thereon up to the close of the examination.

All claims are valued net as to reinsurance, that is, if the reinsurance is in companies admitted in the state, the amount due is deducted from the estimated loss on each claim.

The property damage and collision claims as a rule present no great difficulty. The former, naturally, are the most numerous, but can be valued by using an average value derived from the company's own experience and a comparison with the average cost per claim in companies doing a similar class of business.

The method for computing reserves for workmen's compensa-

tion insurance and for both auto and other liability is found in Schedule P of the convention blank. This method is known as the statutory reserve and is fully set forth in section 86 of the New York Insurance Law. While the reserves computed in accordance with this method form a standard of comparison, it has been found that under certain conditions the final reserves are inadequate. There is an added provision in the law which provides that where the statutory reserve appears not to be adequate, the superintendent of insurance may call for additional reserves. A committee of this Society has been working to devise a method which will produce reserves that will be more defensible and more satisfactory to the companies and to supervising authorities than the Schedule P method. In the meantime, this method is used, and individual estimates of claims must be made to make sure that the reserves set up will be adequate to take care of future losses.

The statutory method for liability losses takes into consideration the claims in suit. These claims are valued by amounts ranging from $750. per suit for those arising on policies written during three years prior to statement to $1,500. per suit for those policies written ten years prior.

For liability policies written during the three years prior to the date of examination the law requires that 60 per cent. of the earned premiums in each of the three years be computed and that loss and expense payments of each year be deducted from the corresponding earned premiums, the remainder for each of the two years immediately preceding examination date is the reserve for that year's business. For the third year immediately preceding examination date the reserve is the remainder or the value of the outstanding suits on policies written in that year, whichever is the greater. If, however, the total reserve for liability claims computed in accordance with the statute, as described above, is less than the reserve based upon individual estimates of outstanding liability losses, the total estimated or "case basis" reserve must be set up.

In estimates for workmen's compensation losses, the smaller claims may be averaged by using company statistics over a period of years. If such an average is used for the medical and the temporary cases, it should be computed by states, since the laws of the different states and the manner of administering the law

differ materially. In most companies the reserves are found to be ample on the smaller cases and also on the more serious cases where there is a definite maximum stated in the law. The companies are apt to be optimistic in the cases where there is a possibility of heavy losses. In New York State tabular values are required for death and total disability claims which involve life contingencies, but the latter claims for injuries sometimes do not develop immediately and are carried as temporary total disability. The change to total disability makes a considerable increase in the reserve.

In estimating claims, the expense of investigation and settlement is included and Schedule P provides both for allocated and unallocated expense. Companies differ radically in the method of allocating claim expenses to the various lines. In some cases a large proportion is allocated to the line; the unallocated portion must be prorated. When the individual claims are estimated, the expense can in some cases be determined and allocated. There is, however, the question of future unallocated. This is usually determined by using the company's own ratio for these expenses to claims over a period of years. These ratios are applied to the outstanding reserves by lines and added to the reserves. A greater effort upon the company's part to allocate expenses would have the effect of reducing the amount which must be estimated and added for future unallocated expense.

In addition to the reserves for claims known to be outstanding at the date of statement, a separate list of subsequent claims is made. These are claims which were actually incurred as of statement date but notice of which was not received until afterward. Some companies are able to estimate with fair accuracy the amount of losses which will be incurred on such claims and set up this amount as called for in the convention blank. The examiners with the advantage of subsequent developments are often compelled to increase the reserves substantially over company estimates for subsequent claims.

There is also developed a list of additional claims due to reopened and other claims which for various reasons were omitted from the company's outstanding list. This list, obviously, should not be large, since the additionals tend to show whether or not companies are unduly optimistic in closing cases, or, if claims were never listed, the system for recording claims in the account-

ing or statistical department is ineffective. In submitting the report of examination, it is the practice to analyze the changes in reserves by lines, showing first claims paid since date of statement and then the outstanding claims, giving the comparison between the company's reserves and the examiner's reserves.

In comparison with reserves for policyholders, the remaining liabilities are usually not large, either in number or amount. Both the commission liability and the liability for taxes can be estimated fairly close. Unpaid bills as of date of statement are checked and the total amount paid or still outstanding is set up. Unpaid dividends to stockholders or profit sharing agreements, if any, are determined, and search is made for any outstanding liability due to borrowed money or suits other than those representing claims of policyholders. Contingency reserves are sometimes carried by companies to take care of some unforeseen deficiency in assets or increase in reserves. Unless they are for some definitely stated purpose, they are considered as part of the company's surplus.

The final sum of outstanding liabilities determined as above is deducted from the admitted assets. The difference represents what is often designated "surplus to policyholders." When the capital stock is separated from this amount, the surplus remaining is the index of solvency. For, after the examiner has inspected and valued the company's assets and estimated the liabilities, if there is no excess surplus over capital or if the capital is impaired, the stockholders are called upon to make good such deficiency. If the capital and surplus are not brought up to the legal requirements in the time allowed by the superintendent, the company is declared insolvent.

Following the financial statement of income, disbursements, assets and liabilities, the examiners include an underwriting and investment exhibit in the report of examination. This is a comparison of the statement items as shown in the previous report of examination with the statement in the report. This analysis shows the changes in surplus for the intervening three-year period and indicates to what such changes are due.

The foregoing summarizes the general routine of an examination; however, it is seldom that the examiner is not faced with some new problem not previously encountered since companies differ much as individuals differ. There is the difference due to

the kinds of business; for instance, the examination of a company conducting one line, exclusively, is not as complex as that of a multiple line company. Formerly, there were companies doing plate glass business only, and these companies have been extended to embrace most of the other miscellaneous lines. There is a company which does credit business only. In this case the general procedure is the same, but questions arise which are unique to that kind of business. For example, the credit company's reserve for losses is on a different basis.

There are important features peculiar to the fidelity and surety business. The taking of collateral in writing certain forms of surety bonds may be cited as an example. This collateral often amounts to thousands of dollars and consists of savings bank books, life insurance policies, personal notes, securities such as bonds and stocks, mortgage deeds, as well as jewelry and other valuables. This collateral is held by the company until the liability under the bond is ended. It does not enter the company's books and of course should not be taken credit for until the principal in the bond defaults and the company is obliged to assume the loss, then the collateral may be taken over as salvage. In the meantime the company holds the collateral in trust.

Records must be kept, accounting for all such collateral received, showing if possible the value thereof. If collateral is released, a record or receipt must show to whom it is paid. If taken by the company, a record of the losses paid must appear with the value of the collateral taken as a reimbursement. The only means of knowing whether this collateral is intact and is being properly held in trust is by means of an examination of the company records and a verification by the actual physical examination and count.

Another feature of the examination of companies doing a fidelity and surety business is the valuation of salvage. In some cases this is considerable and it is very often difficult to determine the value because of litigation or the nature of the salvage. Some companies make a practice of charging off salvage of this kind, carrying it only in Schedule X, which is provided in the convention blank for unlisted assets. If this salvage is finally sold, the recovery is entered through income. Other companies, however, prefer to take credit for salvage as a non-ledger asset.

Other features might be enumerated indefinitely. In general,

it may be said that examination is made in accordance with the express provisions of the law. The section requiring examination in the New York law specifies the examination of the "affairs" of the company. This is interpreted to mean the affairs as shown by the books and records. Other sections govern particular phases, such as investments, reserves, etc. Examination necessarily includes the general conduct of business, the systems of handling accounts and finally the management as reflected in the company's underwriting and investment policy.

In addition to the financial statement the reports include usually a brief explanation of changes made which affect the company statement.

The law provides that when the examination is completed a full and true report shall be made comprising the facts appearing upon the books and records of the company with the examiner's conclusions and recommendations. This must be duly attested to by oath. A hearing before the superintendent of insurance is also stipulated, that is, if the company has objections to the examiner's findings as given in the report. After the company has been given the opportunity to be heard the report is filed. The superintendent may withhold the report if it is deemed in the public interest to do so. It is usually the practice for newspapers to publish a summary of the reports. Each year a digest of reports of examinations made in the preceding year is included in volume III of the superintendent's annual report.

No attempt has been made in the above outline of procedure to give the detailed check of each item which finally appears in the report. Nor is it within the scope of this paper to dwell upon the various problems which develop during the course of examination. Suffice to say, that the extent of the examination depends largely upon the company under examination. The organization itself, the systems of keeping accounts and the statistical records are exceedingly important.

It is not necessary to point out to the members of this Society the rapid growth both in the number of casualty and surety companies and the volume of business conducted by these companies. The increase in the fidelity and surety, in workmen's compensation and the automobile lines alone has added materially to the work of examination.

It has been stated above that the examiners are depending more

and more upon the statistical departments for the data which must be assembled in making up the company's statement. If such data is readily accessible, the work of examination is appreciably shortened. Company officers know what is required both for annual statement and for examination purposes.

Efforts are constantly being made towards uniformity and standardization of accounting and statistical records. The members of this Society and the Association of Casualty and Surety Accountants and Statisticians have an interest in these problems and have made valuable contributions to their solution. Further studies of accounting systems and of statistical methods, particularly in the valuation of reserves, will be of incalculable value to both the companies and the supervising authorities.

A METHOD OF ASSEMBLING AND ANALYZING THE DATA REPORTED UNDER THE UNIT STATISTICAL PLAN

BY
MARK KORMES

INTRODUCTION

The essential features of the New York Unit Statistical Plan, as well as the events leading to its adoption, have been stated comprehensively in Mr. Graham's paper* dealing with the method used by a carrier in the preparation of the data to be reported under the provisions of the Plan.

The Plan was designed with the following objects in view: (a) to determine to what extent the manual rules are observed and thus to correct improper underwriting practices, (b) to use the same experience in the merit rating of risks and in the determination of classification pure premiums and (c) to ascertain the degree of difference between small and large risks.

In this paper an attempt is made to describe the methods of assembling, analyzing and tabulating individual risk experience by a central organization in its efforts to fulfill the aims of the Unit Statistical Plan.

In order to permit a clear understanding of the office routine and the manner in which the individual risk experience enters into both the statistical and rating procedure, we shall give a brief outline of the internal organization of the Compensation Insurance Rating Board.

The Recording Division or Index

The Statistical Plan provides that a copy of every policy declaration, cancelation or endorsement be submitted to the Board for approval. The number of employers purchasing compensation insurance in the State of New York may be roughly estimated at 250,000. The number of policy declarations, cancelations and endorsements received by the Board annually is more than twice that amount. To classify and file this vast material, the Board has adopted a numerical file system whereby to every employer there is assigned a Board file number. To

* "The New York Unit Statistical Plan; A Method of Preparing and Reporting Data and Analyzing the Carrier's Business," by Charles M. Graham, *Proceedings,* Vol. XVII, page 190.

this end, cardboard cards 3″ x 5″ have been prepared which show the name of the employer, the location, business address, hazard coverage and Board file number (Exhibit I-A). These cards are filed alphabetically. Whenever there are two or more names specified for a given risk, cross-index cards are prepared (Exhibit I-B) as it is very likely that some material may show the names in different order or else it may fail to show the complete name. This arrangement permits the Recording Division to assign Board file numbers to all material received.

Due to numerous errors of various nature on the part of the carriers as well as to the similarity of many names, the task of assigning Board file numbers is not an easy one and often a very slight variation in the name, address or other item of information will cause no end of confusion.

The Expiration Record

In order to assure the completeness of the submittals of experience by the carriers as well as the completeness of submittals of policy declarations, an Expiration Record has been established. Cardboard cards 3″ x 5″ showing the name of the assured, the effective date of the policy and the file number are prepared for every risk (Exhibit II). When a policy declaration is received, an entry is made to show the policy year, the carrier code and the policy number. The cards for risks effective in any given month are filed in numerical order and by effective date within each month.

When a cancelation is received, the card is marked to indicate the effective date of the cancelation in order to distinguish between flat and short term cancelations. If the policy is reinstated, the date of reinstatement is also entered in a space provided for that purpose.

At the time the experience report reaches the Board, the date of its entry is shown in the proper space on the card. The expiration record clerk also reviews the losses on the experience card to note whether there are any open cases and if all cases are closed, a check mark is inserted in the appropriate column which will indicate that no second, third or fourth reports will be required. When the experience for a certain month has become overdue, the cards for that month are reviewed and any one which is not marked to show the receipt of experience and where

the policy has not been canceled flat, serves as a basis for a follow-up letter to the carrier.*

The Statistical Division

After all the experience cards are recorded by the Expiration Division they are turned over to the Statistical Department where they are coded, audited, punched, verified and check-tabulated, all of which processes will be described in detail in another part of this paper. They are then turned over to the Filing Division.

The Filing Division

For every Board file number there is a so-called "statistical" file folder. This folder contains all the experience cards for a given risk as well as all the correspondence in connection therewith and in case of risks not subject to rating, all other material like policy declarations, etc. At the present time a separation is maintained as between risks subject and not subject to rating, each group being filed in numerical order. For risks subject to schedule and/or experience rating there are usually two additional "rating" files, each for a separate policy year which contain all policies, inspection reports and other material relative to the rating of the risk.

The Rating Division

From the above it becomes apparent that when the time arrives for the rating of the risk all experience relative to the given risk will be found in the statistical file, provided that such experience has been submitted by the carrier in accordance with the provisions of the Statistical Plan. The office routine described above requires at the present time from three to four weeks and it is, therefore, evident that a delay on the part of the carrier in submitting experience results in a corresponding delay in the rating of the risk.

Statistical Routine

We shall now give a detailed description of the various steps of office routine in connection with the experience data sub-

* The author has recently evolved a new plan for recording of policy declarations, cancelations, etc., which will eliminate all of the shortcomings of the present expiration record and permit an automatic follow-up. This plan is described in detail in the latter portion of this paper.

mitted to the Board. Inasmuch as frequent references will be made to experience cards, the exposure and the loss sides of the card have been reproduced in Exhibits III-A and III-B, respectively.

Receipt of Experience—Controls

Upon receipt, each experience card is checked to determine whether the total risk payrolls, premiums and losses found in the lower right-hand corner of the card agree with the totals of the individual items reported. This is done in order to eliminate all clerical and typographical errors. When these totals are found correct, the shipment is summarized and the grand total compared with the letter of transmittal. The shipment is then acknowledged and the carrier advised of discrepancies whenever such are found to exist. The correct totals are entered on the control card (Exhibit IV-A).

Assignment of File Numbers and Recording of Expirations

The cards are then stamped by means of a multigraph machine in the lower left corner to indicate the date of receipt and the date of acknowledgment of the shipment. The next step is the assignment of Board file numbers by the Index Division. The file numbers are shown in pencil in the upper right corner of the card and are followed by the Symbol S, X or SX whenever the risk is subject to schedule, experience or both schedule and experience rating. At this stage there begin serious difficulties. It happens very often that the name shown on the experience card does not agree with that shown on the original declaration by reason of clerical mistakes, like spelling, transposition of letters or else because of a change of interest of which change the Board has not been advised. The number of such cases runs into the thousands. In order not to delay the statistical procedure, such cards are marked with the symbol "X" in red and delivered to the Statistical Division for coding, auditing, punching and verifying. A tabulated record is prepared for these "special" cards separately for each shipment and the punch cards are filed in special cabinets. Correspondence is immediately commenced with the carrier to determine the correct name and address of the assured. When the Board file number is ultimately assigned to these cards, the corresponding punch cards are pulled, the file

numbers inserted and the cards combined with the remainder of the shipment. Those cards to which Board file numbers have been assigned are forwarded to the Expiration Record where the experience is recorded and the date of such record is shown on the experience card in the space captioned "Listed." When this process is completed the cards for each shipment are assembled, put in serial number order and delivered to the Statistical Division.

Coding

The following information is then coded:

1. Carrier code number is inserted opposite the carrier's name.
2. Term. Full term policies are designated by putting a horizontal line in the space to the right of the legend "Classification Wording" and short term policies are designated by the letter "S" in the same space.
3. Type of Coverage. Full coverage is designated by digit "0" and ex-medical coverage by digit "1" in the space to the left of the legend "Classification Wording."
4. The Industry Schedule is assigned on the basis of the governing classification and a circle is drawn around the governing classification.
5. Premium Size Codes are inserted in the space provided on the experience card in accordance with the table of premium size groups shown below:

Code	Premium (Minimum Premium Risks)
00	under $ 25
01	25- 49
02	50- 99
03	100-199
04	200-399
05	400 and over
	(Non-Minimum Premium Risks)
10	under $ 25
11	25- 49
12	50- 74
13	75- 99
20	100-149
21	150-199
30	200-299

Code	Premium (Non-Minimum Premium Risks)
40	$ 300- 399
50	400- 499
60	500- 749
61	750- 999
70	1,000- 1,499
71	1,500- 2,499
72	2,500- 4,999
80	5,000- 7,499
81	7,500- 9,999
90	10,000-14,999
91	15,000-24,999
92	25,000-49,999
93	50,000-74,999
94	75,000-99,999
95	100,000 and over

The above table gives an insight into the various possibilities of the sub-division of experience according to size of risk.

Preliminary Audit of Experience

The so-called auditors check the coding in the first place. The type of rating code is assigned by them in accordance with the symbol shown by the Index Division after the Board file number. Digit "0" is inserted in the space labeled "Type of Rating" in case of risks not subject to rating. Digits "1", "2" and "3" are used for risks subject to schedule, schedule and experience, and experience rating, respectively. A rough calculation is made to verify the extension of the payrolls by the rates and in the case of small risks, the correctness of the Loss and Expense Constant or the Minimum Premium is verified. Classifications assigned to losses are compared with the classifications shown on the exposure side of the card. In case of death, permanent total and open claims, the individual reports are examined and reserves checked in accordance with the tables. Upon completion of this procedure, the auditor inserts his or her initials in the space labeled "Audit." If errors of minor nature are disclosed, a list of all errors for a given shipment is prepared and sent to the carrier, together with a form letter requesting the necessary corrections (Exhibit V).

Questionable items or errors of more serious nature like the reporting of classifications, the use of which is subject to authorization by the Board, the use of discontinued classifications or classifications not available in New York, the reporting of large payrolls on an estimated basis, incorrect valuation or classification of losses, etc., are marked for a "final" audit. Experience cards which are correct in every respect but which by reason of premium volume or classification seem to indicate that they may qualify for either experience or schedule rating are also marked for final audit. This is accomplished by leaving the space labeled "Audit" blank and by specifying in the lower left corner of the card the reason for the necessity of a final audit. The blank "Audit" space constitutes a signal to the filing clerks that when the card reaches the Filing Division it is to be delivered together with the file to a specially designated auditor for final audit.

Punching and Verifying

Upon the completion of the preliminary audit, the shipment of experience cards is ready to be transferred to the Hollerith

card records. Exhibit VI shows a reproduction of the punch card used by the Board. The following information is punched:

(1) Policy Number.

(2) Board File Number. The insertion of this item permits a reference to the file in the case a question should arise in connection with a given punch card.

(3) Month and Year of Issue.

(4) Carrier's Code Number.

(5) Serial Number. This information is inserted primarily as an aid in the checking of the shipment and also for the purpose of filing the punch cards prior to the final tabulation of the experience. Furthermore, complete lists of all risk cards are prepared which are very convenient in connection with the handling of revisions.

(6) Industry Schedule.

(7) Type of Rating Code.

(8) Premium Size Group Code.

(9) Coverage Code.

The above items are punched directly from the information shown on the card by the carrier and supplemented by the Index Division, the coders and the auditors.

(10) Transaction. The punch clerks are instructed to prepare a separate card for each classification showing exposure and premium, such cards being designated as "premium" cards. A separate card is punched for each indemnity and each medical amount on compensable claims as well as separate cards for total non-compensable or contract medical amounts for each classification,* these cards being known as "loss" cards. Finally, a summary card is punched showing total payrolls, premiums earned and losses incurred, as well as the amounts of the Loss and Expense Constants, this card being designated as a "risk" card. Thus, the transaction column is punched as follows:

---

* Beginning with policy year 1929, any non-compensable or contract medical claim in excess of $100 is punched as a separate item in order to permit an analysis of experience to determine the excess factor for medical losses in the rating plan.

Digit "1" (P) to designate the "Premium" cards.
Digit "2" (L) to designate the "Loss" cards.
Digit "3" (R) to designate the "Risk" cards for full term policies.
Digit "4" (S) to designate the "Risk" cards for short term policies.

(11) Classification. The premium and loss cards show the classification code to which they are assigned; the risk card shows the code of the governing classification.

(12) Kind of Injury. This column is punched as follows:
Digit "0" in the case of "Premium" or "Risk" cards.
Digit "1" for a Death case.
Digit "2" for a Permanent Total injury.
Digit "3" for a Major Permanent injury.
Digit "4" for a Minor Permanent injury.
Digit "5" for a Temporary Total injury.
Digit "6" for a Compensable Medical claim.
Digit "7" for a Non-Compensable Medical amount.
Digit "8" for a Contract Medical amount.

The key-punch operators are familiar with these codes and punch them directly from the symbol appearing opposite the amount on the experience report (Exhibit III-B).

(13) Payroll or Number of Compensable Claims. On premium and risk cards this field is used for the insertion of payrolls. In the case of per capita classifications, 1,000 represents each unit of exposure. On loss cards, digit "1" is punched in the forty-third column for each compensable claim and the field is entirely omitted in the case of medical amounts.

(14) Premium or Incurred Cost. The premium card shows the audited premium for a given classification and the risk card shows the total policy premium inclusive of the amount of the Loss and Expense Constants, if any. The loss card shows the amount of loss.

(15) Constant. This field is punched in the case of risk cards only and provides for a separation of the Loss and Expense Constants.

(16) Total Risk Losses. Risk cards only show this information.

(17) Number of Risks. Each risk card is punched digit "1" in this column, otherwise digit "0" is shown.

(18) Open or Closed. Used in connection with compensable claims only, digit "1" being punched for an open claim and digit "2" for a closed claim.

(19) Claim Number. To identify any particular claim if a reference to the original report becomes necessary.

(20) The Month and Year of Accident. Used in connection with loss cards only.

In addition to the above, columns 75 to 80 of the punch cards, which have no headings whatever, are used as follows:

(21) Column 75 is punched digit "1" on loss cards representing amounts paid under the U. S. Longshoremen's and Harborworkers' Act.

(22) Column 76 is punched digit "1" in the case of "complement" risk cards where a deduction of a risk is contemplated.

(23) Columns 77 and 78 are reserved for some future use.

(24) Column 79 is used in connection with revisions, digit "1" being punched to indicate corrections, digits "2", "3" and "4" to indicate "second", 'third" and "fourth" reports respectively.

(25) Column 80 is punched digit "X" to indicate "Per Capita" classifications.

After the cards are punched they are verified. The operator then stamps each experience card in the space labeled "E. P." and "L. P." to show her symbol and the date on which the verification was completed.

Check Tabulation

The punch cards for a given shipment are sorted by transaction to separate premium, loss and risk cards. Each type of card is then run through a printer-tabulator and the totals shown in the following manner:

Carrier: The X. Y. Casualty Co. Code No.: 39
Serial Numbers: 179 to 254
Received: (Second date stamped in lower left corner)

1. Premium Cards	Payrolls	Premiums			
2. Loss Cards	No. of Claims	Losses Incurred			
3. Risk Cards	Payrolls	Premiums	Losses Incurred	Constants Loss	Expense

If the above tabulation shows discrepancies between the premium and risk cards and/or the loss and risk cards, the cards are tabulated again to show the above information for each serial number in order to trace the discrepancy to one or to several experience cards. As soon as the check-tabulation is balanced, it is forwarded to the control clerks and the punch cards are filed in cabinets by carrier and by transaction. The cards of each carrier are kept in serial number order.

Controls

The results of the check-tabulation are compared with the totals on the control card and when correct they are entered on the reverse side of the control card (Exhibit IV-B). The experience cards are then forwarded to the Filing Division where they are attached to the respective files, except that the cards marked for "final" audit are brought together with the file to the auditors.

Final Audit

The auditor reviews the questionable item as well as any other pertinent information in the file and then corresponds with the carrier in order to clarify the situation (Exhibit VII). Whenever the card, together with other information in the file, indicates that the risk qualifies for schedule or experience rating and is not currently rated, the auditor attaches a memorandum to this effect and transfers the file to the proper section of the Rating Division. If the file indicates the use of improper classifications, the auditor transfers the file to the Engineering Division for review and classification.

Revisions

In accordance with the provisions of the Statistical Plan, the carriers are required to submit a revalued report of all death, permanent total and all open cases twelve, twenty-four and thirty-six months after the original submission of the experience.

In addition to these "second", "third" and "fourth" reports, there are numerous occasions where a correction is necessary either by reason of an error in the original report or else the lack of complete information at the time of the preparation of the original report, e. g., final audit of payrolls. The office procedure in connection with revisions is quite analogous to that in connection with the original reports as described above, except that the audit of revisions is considerably more laborious. This is due to the fact that in practically every instance it is necessary to refer to the original report which in turn means the handling of many files. If one bears in mind the difficulties encountered in the assembling of a large quantity of files (like the possibility of files being in circulation, files where the original report is missing either due to misfiling or the incorrect assignment of file numbers) one realizes the tremendous task necessitated by revisions received by the Board to the extent of approximately 25,000 annually. This situation is still more aggravated by the fact that the reporting of revisions seems to present difficulties to the carriers themselves, who either overlook one or another provision of the Plan and sometimes disregard the Plan entirely or submit another "original" report showing revised figures but assigned to a different serial number. Only due to the fact that the receipt of the experience is checked against the record of the policy declaration in the Expiration Division, such "duplicate revised" reports are discovered. As time goes on the provisions of the Statistical Plan will be clearly understood by all carriers and the Board's *modus operandi* will be perfected so that the above-mentioned difficulties will be considerably reduced. The revisions necessitate the punching of two sets of cards, one set to effect a deduction of previously reported items (such amounts being punched as complements to 100,000,000) and the other set is intended to re-establish the revised amounts.

New Expiration Record—An Improvement in Office Routine

The Expiration Record was designed in order to permit the Board in general and the Rating Division in particular, to ascertain at any time whether or not a particular experience report had been filed. It also serves as a check on the completeness of the reports of the carriers, inasmuch as the policy declarations, cancelations, etc., are submitted usually by the underwriting de-

partments and the experience cards by the statistical departments of the carriers. For every policy declaration which was not canceled flat the Board expects to receive an experience card or, vice versa, for every experience card the Board should have a policy declaration on record.

While, in theory, the present Expiration Record arrangement appears to be satisfactory, the practical results have demonstrated that it does not fulfill its purpose to the extent desired and that it could not be improved without a substantial increase in personnel. The situation may be best illustrated if one considers a case where the experience card is assigned an incorrect file number by the Index Division. The expiration clerk, being unable to find a record of such policy declaration on the expiration card bearing this file number, assumes that the policy declaration was not received and records the receipt of the experience card against the incorrect Board file number, or else prepares a new card copying the policy number and the file number from the experience card. As a result, the receipt of the experience card is not marked against the proper file number so that neither the Rating Division nor the follow-up clerks are in a position to determine whether or not the experience has been received. Other disadvantages of the present Expiration Record are the necessity of sorting all material to be recorded in file number order as well as the cumbersome handling of a large number of cards in order to make a single entry.

The following plan has been adopted by the Board to eliminate all the shortcomings of the present Expiration Record and to permit an automatic follow-up. In essence, this plan provides that a punch card be prepared for each policy declaration, cancelation or reinstatement. Such punch card would show the following information: (a) policy number, (b) Board file number, (c) carrier's code number, (d) effective date, month, day and year, and (e) transaction code (to differentiate between declarations, cancelations or reinstatements). The punch cards obtained in this manner would serve to prepare for each month of issue two sets of lists, one by policy numbers for each carrier, the other by Board file numbers to include the policies of all carriers. When the experience cards for a given month are received, they will be checked against the monthly lists of policies

for the reporting carrier. If all cases on the experience card are closed, the list will be marked to indicate that no second reports are necessary. The second, third and fourth reports would find their way into this record in a similar manner.

The simplicity and advantages of the above method will become apparent if we consider that the sorting of policy declarations, cancelations, etc., as well as the sorting of experience cards will be entirely superfluous, as the punching of the cards and the checking against the list may be done in any order whatever. Furthermore, the period required for the punching of declarations and the recording of experience cards will be considerably reduced. Any errors made by the Index Division in the assignment of file numbers to experience cards will be eliminated, inasmuch as the file numbers will be assigned directly from the list of policies, thus placing the experience card in the same file to which the policy has been attached. If, for some reason or other, the policy declaration has been assigned an incorrect number, it will be always possible to trace the file number to which it has been assigned from the monthly lists of policy declarations. All policies for which no experience cards are received and which are not canceled flat, would be immediately noticeable after the shipment of cards for the given month has been completely recorded so that a form letter could be sent to the carrier with a list of the policies for which no report has been received.

The above plan will go into effect beginning with policy year 1932. It will be necessary for a period of twenty months to have both the old and the new Expiration Record for the reason that all experience relative to policies issued prior to 1932 will not reach the Board until August, 1933. The new Expiration Record, however, will not require any additional help, inasmuch as the amount of work of the old Expiration Record will gradually decrease. As a matter of fact, as soon as the present Expiration Record ceases to exist, the number of employees of the new unit will be about one-half of the number needed at the present time.

It may be well also to point out that the creation of the new unit will permit the experience cards to remain in the Statistical Division from the time of receipt up to the time when the punch cards have been completely balanced and filed. Such an arrange-

ment is extremely desirable as it eliminates the special handling of the cards where the name is incorrectly reported and cards which are misplaced or mislaid by other divisions.

TABULATION OF EXPERIENCE

The first year reported under the Unit Statistical Plan was policy year 1928. We shall give a brief description of the manner in which the Board has tabulated this experience. Consideration has been given to the method of obtaining first, the classification experience comparable to that under the old Schedule "Z" and second, various analyses of the risk experience for the purpose of study and investigation of such features of the compensation business, of which study was impossible or impracticable heretofore.

The premium, loss, and risk cards have been tabulated separately in the order stated and as each tabulation presents different features and serves different purposes, we shall take them up individually.

Tabulation of Premium Cards

The premium cards were principally designed to permit the tabulation of classification experience for rate making purposes. At the time, however, when the Conference Committee had under consideration the problem of a loss cost differential between small and large risks, it was pointed out that the comparison of experience on the collected premium basis does not accurately reflect the actual conditions.* It would be, therefore, of advantage to present the experience by size of risk both on the collected and the manual level of rates. Inasmuch as the tabulation by size of risk would have to be presented separately for each of the three broad industry groups and the Board having decided to subdivide the experience by month of issue, it became apparent that the use of all the premium size groups as shown on page 103 would be impracticable, as it would produce a too fine subdivision of the experience and the number of master cards to be punched would assume prohibitive pro-

* See paper entitled "Recent Developments with Respect to Distribution of Workmen's Compensation Insurance Costs," by Charles J. Haugh, Jr., *Proceedings*, Vol. XIV, page 262. This particular item is discussed on page 268.

portions. It has been decided, therefore, to subdivide the premium cards into the following premium size groups:

Premium Size Group 1— Minimum Premium Risks		Codes 00 to 05 inclusive
Premium Size Group 2— Risks with premiums up to	$ 99	Codes 10 to 13 inclusive
Premium Size Group 3— Risks with premiums from	$ 100- 399	Codes 20, 21, 30 and 40
Premium Size Group 4— Risks with premiums from	400- 999	Codes 50, 60 and 61
Premium Size Group 5— Risks with premiums from	1,000-4,999	Codes 70, 71 and 72
Premium Size Group 6— Risks with premiums of	5,000 and over	Codes 80, 81 and 90 to 95 inclusive

The premium cards had to be furthermore subdivided as to those for full medical and those for ex-medical coverage. The manner in which the actual tabulation was conducted is illustrated in Exhibit VIII. As soon as a sheet had been tabulated it was subjected to an audit which consisted in calculating the average collected rates and comparing them with the manual rates effective at that time. In this manner all errors in punching of payrolls or classification codes have been discovered and corrected.

From the tabulation thus obtained master cards were cut. A facsimile of the master-card used by the Board is shown in Exhibit IX. It will be readily seen that both the forms of blanks used for the tabulation, as well as the master cards, have been designed in such a way as to make the punching simple and efficient. Exhibit VIII also discloses the fact that in addition to the monthly cards, total cards have been prepared for each classification, thus obviating the necessity of adding the sheets and permitting a direct check of both sets of master cards against each other. The verification was, therefore, limited to the coding portion of the card only.

Tabulation of Loss Cards

In connection with loss cards, the subdivision by industry groups and by premium size groups was deemed unnecessary for the reason that the losses on the risk cards would supply such information directly. The loss cards have been, therefore, subdivided, first, by kind of injury and second, by month of issue within each classification. The loss card tabulation is illustrated in Exhibit X. This tabulation was also audited in order to discover any errors in code numbers and to determine the proper

classification of claims as regards the kind of injury. To this end, the average claim cost was calculated and whenever it was not found reasonable for the given kind of injury, the punch cards and the files were investigated to determine whether or not the questionable item had been punched correctly.

Tabulation of Classification Experience

As soon as the master cards obtained from the premium and loss card tabulations have been balanced and compared with the controls, classification total cards were removed and the classification experience tabulated.

It may be well to remark at this point that while the total number of master cards was less than 10 per cent. of all the original punch cards, the number of classification total cards used in the tabulation of classification experience was only about 12,000.

Tabulation of Risk Cards

The risk cards were designed to permit an analysis of the experience in every conceivable way. In view of the fact that the number of risk cards is approximately 250,000, the tabulation of these cards for any particular item of information would involve a considerable amount of time both for sorting and for tabulating. The Board has, therefore, endeavored to prepare one set of master cards which would yield practically all of the information that might be desired. To this end, the risk cards were tabulated separately for full term and short term policies. Each of these groups was subdivided into non-rated, schedule rated, schedule and experience rated, and experience rated risks. The cards for each type of rating were then sorted by industry schedule, each industry schedule subdivided by premium size groups (using all possible premium size codes) and finally, each size group was subdivided by month of issue. The only item of information not used was the governing classification, as the use of this item would result in a very fine subdivision of experience and it was felt that if an analysis of any special classification should appear desirable, such an analysis could be readily prepared from the original punch cards. The experience

of the State Fund was tabulated separately in order to make an adjustment in the collected premiums to bring them to the level of manual rates. The manner of the tabulation of risk cards is illustrated in Exhibit XI.

The tabulation of the premium cards as described above makes it possible to calculate premiums at manual rates separately for each of the three broad industry groups, with the further subdivision into six premium size groups. The fact that the payrolls for each classification are available by month of issue, will make it possible to present a comparison of loss ratios both on the collected and the manual basis prior to and after the introduction of the loss and expense constants. It will be also possible as time goes on to change the basis of the classification relatively from five policy years to sixty calendar months, thus permitting rate revisions at any time during the year.

The master cards obtained from the risk card tabulation will permit a presentation of size of risk experience by industry schedules, by type of rating, by term, by coverage or any desired combination of these items. Inasmuch as the monthly figures are available, the Board will be in a position to make comparisons between the ratios of losses paid to premiums written as reported in the quarterly loss ratio data and the ratios of losses incurred to earned premiums for the corresponding periods.

The foregoing outline of methods used in tabulating the unit reports does not claim to exhaust all of the possibilities of the Plan. Further refinements as, for example, the punching of the actual merit modifications for each risk and thus the possibility of obtaining the actual analysis of rating results might appear desirable. It is hoped that in time both the Board and the carriers will perfect their technique of handling the unit reports and thus contribute toward a more scientific rate making for workmen's compensation insurance.

The results of the above tabulations are not yet available in their final shape and therefore it is too early to draw any conclusions. But it is reasonable to assume that the various analyses prepared from such tabulations for one or more policy years will shed new light on the various problems of workmen's compensation insurance of sufficient interest to serve as material for another contribution to these *Proceedings*.

EXHIBIT I-A

Board File #555,555

JOHN DOE & RICHARD ROE

LOCATION

New York City

BUSINESS ADDRESS

150 West 139th Street

COVERAGE

5403 - Carpentry

Form 93-50M-3-31-31

EXHIBIT I-B

Board File #555,555

RICHARD ROE

LOCATION

New York City

BUSINESS ADDRESS

150 W. 139th St.

COVERAGE

5403 - Carpentry

John Doe & Richard Roe

Form 93A-25M-9-11-31

EXHIBIT II

EFFECTIVE MO. 3 DAY 21 | FILE NUMBER 555,555

NAME OF ASSURED JOHN DOE & RICHARD ROE

Policy Year	Carrier	Policy Number	Cancellation		Experience Report		All Cases Closed	Revalued Reports		
			Eff. Date	Reinst.	Requested	Received	✓	2nd	3rd	4th
28	OA	245,678				11-7-29		11-3-30		
29	OA	380,231				11-1-30	✓			
30	OA	475,383	3-2			-				
30	LI	5,675,929				10-20-31	✓			
31	LI	5,842,711								

Form 202—50M-9-2-31

EXHIBIT III-A

Policy No. _____

Assured _____

Address _____

Period: From _____ to _____

Location _____

Special Conditions Affecting Coverage:

Board File No.

COMPENSATION INSURANCE RATING BOARD

New York Experience-Exposure

Carrier	Serial Card No.

FOR BOARD USE ONLY

Location	Ind. Sch.	Type Rtg.	Pr. Size	Listed	Audit	E. Punch	L. Punch

Class Code	Classification Wording	Estimated Payroll	Estimated Rate	Estimated Premium	Audited Payroll	Audited Rate	Audited Premium
	Total - All Classes		X X			X X	
	Loss & Expense Constant				X X X X	X X	
	Total Policy Premium				X X X X	X X	
	Total Losses Incurred (Including both Compensation & Medical)						

EXPERIENCE

Form 201- 200M4-30-31

EXHIBIT III-B

NEW YORK EXPERIENCE - Losses

Claim Number	Date of Accident	Class. Code	* Kind of Injury	Incurred Cost		Open or Clos'd	U. S. or N. Y.
				Comp.	Med.		

Class. Code						
Non Comp. Med.						
Contract Med.						

*D-Death; P-Permanent Total; M-Major; N-Minor; T-Temporary.
Individual Reports Must be filed on all D & P T and Open Cases.

EXHIBIT IV-A

COMPENSATION INSURANCE RATING BOARD—MONTHLY CONTROL CARD

CARRIER _____ MONTH _____ POL. YEAR 193__

TOTALS SHOWN IN THE LETTERS OF TRANSMITTAL

Date Received	Date to Index	Serial Numbers From	Serial Numbers To	Payrolls	Premiums	Losses	Remarks
Total							
Total of Punch Cards							Form 217-1,500-7-15-31

EXHIBIT IV-B

COMPENSATION INSURANCE RATING BOARD—MONTHLY CONTROL CARD

CARRIER _____ MONTH _____ POL. YEAR 193____

PUNCH CARD TOTALS

Date Posted	Serial Numbers		Payrolls	Premiums	Losses	No. of Risks	No. of Claims	Loss & Ex. Constant	Remarks
	From	To							
Total									

EXHIBIT V

COMPENSATION INSURANCE RATING BOARD

370 SEVENTH AVENUE

NEW YORK

POLICY YEAR

IMPORTANT - Please direct your reply to the undersigned and mention the above date and symbol.

Dear Sir :

Attached is a list of a number of your experience reports for policy year 192 , which do not appear to be correct. The nature of errors is explained in the appropriate column.

May we request you to review these items and let us have the necessary corrections at the earliest possible date?

We shall appreciate it very much if you would be kind enough to look into the causes for these errors and to eliminate them from your future reports.

Very truly yours,

ASSISTANT ACTUARY

259

LIST OF ERRORS ATTACHED TO LETTER OF.....
SENT TO THE.....COMPANY

Board File No.	Serial Card No.	Policy Number	Nature of Errors

EXHIBIT VI

Classification and Risk Experience Card

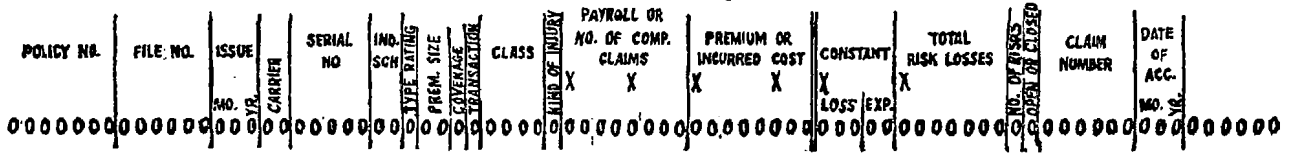


EXHIBIT IX

Master Card

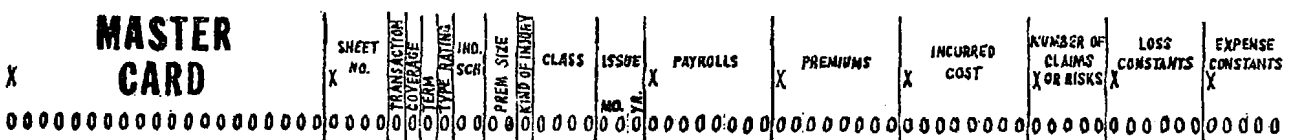


EXHIBIT VII

COMPENSATION INSPECTION RATING BOARD

370 SEVENTH AVENUE

NEW YORK

POLICY YEAR

Date_____

Dear Sir :

RE: ASSURED:
POLICY NO. FILE NO.
SERIAL CARD NO.

Your experience card covering the above appears to be incorrect as indicated in the paragraphs checked below. It will be necessary to rebill your assured to file a corrected experience card on this case. Care should be taken to avoid repetitions of such errors.

1. You have failed to charge the loss and expense constant.
2. The loss and expense constant and minimum premium should have been short rated or pro-rated to correspond with the period the policy was in force.
3. Please submit individual report for Claim #
4. You have assigned losses to classification for which there is no audited payroll; we have reassigned them to code
5. You have apparently divided payroll on an arbitrary or percentage basis. If proper records were not kept, all payroll involved should have been assigned to the highest rated class.
6. Payrolls appear to be estimated instead of audited, although you have not indicated that audit was impracticable.
7. Kindly submit your final audit.

Very truly yours,

ZL STATISTICIAN

EXHIBIT VIII

COMPENSATION INSURANCE RATING BOARD — TABULATION OF NEW YORK EXPERIENCE — SHEET NO. 110

SHEET NO.	TRANS. ACTION	COVERAGE	TERM	TYPE OF RATING	INDUSTRY SCHEDULE	PREMIUM SIZE
0110	1	1	0	0	01	04

Premium CARDS — PURPOSE OF TABULATION

POLICY YEAR 1928 — For Master Cards (INSERT "FOR MASTER CARDS" OR "FINAL")

Class	Mo.	Yr.	Payrolls	Premiums	Payrolls	Premiums	Manual Rate	Average Rate	Remarks
2415	01	8	220943	2444					
2415	04	8	62656	730					
2415	06	8	40380	412					
2415	07	8	17921	246					
2415	08	8	38360	439					
					380260	4271	1.17	1.12	
2416	01	8	98528	1322					
2416	02	6	51197	793					
2416	04	8	59682	740					
2416	05	8	71824	940					
2416	06	8	24042	317					
2416	08	8	40997	525					
2531		8	82143	1390					
2531	05		42931	517					
2531	06				471544	6544	1.59	1.39	
2531	07	8	5078	73					
2531	10	8	22488		1260	1011	2.23	3.66	Short Term
2532	01	8		553					
2532	02	8	596804	1305					
2532	03	8	232720	780					
2532	05	8	964490	2897					
2532	06	8	462474	1384					
2532	07	8	631222	1892					
2532	10	8	936168	2799					
2532	11	8	268729	799					
2532	12	8	829272	2495					
					5310148	16404	.32	.31	

EXHIBIT VIII

Form 173-536-8-25-28

EXHIBIT X

COMPENSATION INSURANCE RATING BOARD — TABULATION OF NEW YORK EXPERIENCE — SHEET NO. 62

SHEET NO.	TRANS-ACTION	COVERAGE	TERM	TYPE OF RATING	INDUSTRY SCHEDULE	PREMIUM SIZE
0062	2	0	0	0	00	00

Loss CARDS — PURPOSE OF TABULATION: For Master Cards (INSERT "FOR MASTER CARDS" OR "FINAL")

POLICY YEAR 1928

Kind of Inj.	Class	Ma. Yr.	Losses Incurred	No. of Claims	Losses Incurred	No. of Claims
4	6010	018	1000	1		
4	6010	058	936	2		
4	6010	078	1719	2	3655	5
4	6041	018	4321	12		
4	6041	038	3750	4		
4	6041	048	3250	9		
4	6041	058	381	1		
4	6041	068	4264	6		
4	6041	068	17284	20		
4	6041	078	2272	2		
4	6041	088	6380	4		
4	6041	108	1772	4		
4	6041	118	3187	6		
4	6041	128	953	2	47814	70
4	6042	018	23781	36		
4	6042	028	2455	5		
4	6042	038	13234	31		
4	6042	048	20954	36		
4	[illegible]	[illegible]	[illegible]	41		
4	6254	038	[illegible]	27		
4	6254	068	13179	10		
4	6254	078	5306	[illegible]		
4	6254	088	13274	20		
4	6254	098	568	1		
4	6254	108	4901	13		
4	6254	118	20917	36	212028	350

EXHIBIT X

Form 177-SM-5-25-31

EXHIBIT XI

COMPENSATION INSURANCE RATING BOARD — TABULATION OF NEW YORK EXPERIENCE — SHEET NO. 60

SHEET NO.	TRANSACTION	COVERAGE	TERM	TYPE OF RATING	INDUSTRY SCHEDULE	PREMIUM SIZE
0060	3	0	3	0		

Risk CARDS — POLICY YEAR 1938 — PURPOSE OF TABULATION: For Master Cards (INSERT "FOR MASTER CARDS" OR "FINAL")

Ind. Sched.	Prem. Size	Yo.	No. Risks	Rd. Yr.	Payrolls	Premiums	Losses Incurred	Constants Loss.	Constants Exp.
36	1	30	1	17	38	1 305 961	15 287	9 835		
36	1	30	2	13	38	984 783	11 982	8 239		
36	1	30	3	07	78	517 151	6623	3 594		
36	1	30	3	10	89	756 642	7523	5 939		
36	1	30	4	11	59	1 190 919	13 468	17 209		
36	1	30	5	21	18	1 340 039	17 695	7 299	983	61'2
36	1	30	6	22	58	1 362 595	18 998	12 054	1061	663
36	1	30	7	18	58	1 162 944	15 534	16 898	964	360
		30	8	12	28	732 441	10 094	6815	508	357
		30	9	15	78	914 353	13 054	8 323	628	459
36	4	0			28	1 325 749	19 372	16 347	1037	672
36	4	01	1		68	948 586	13 230	6754	668	462
36	4	01	2	0	8	545 342	7261	9059	408	258
						579 521	7 571	5 293	384	261
36	5	00	1	01	5					
36	5	00	2	02	38	[illegible]	5 774	[illegible]72		
36	5	00	3	01	98		8 285	4[illegible]		
36	5	00	4	02	08	763 [illegible]86	8 232	2 886	4	603
36	5	00	5	02	38	739 647	9 871	2 680		
36	5	00	6	02	38	786 401	9 598	2 028	010	599
36	5	00	7	01	78	1 041 085	7 611	5 356	[illegible]9	678
36	5	00	8	01	88	705 545	7 942	3 230	[illegible]	552
36	5	00	9	02	18	665 462	8 586	5 049		372
36	5	01	0	02	78	1 054 293	11 877	5 907	1[illegible]	[illegible]
36	5	01	1	02	18	794 538	8 524	1 792	[illegible]	[illegible]
36	5	01	2	02	28	1 606 958	9 702	3 489	11	014

EXHIBIT XI

Form 177-134-6-25-38

ON VARIATIONS IN COMPENSATION LOSSES WITH CHANGES IN WAGE LEVELS

BY

PAUL DORWEILER

The typical compensation act provides that the injured or, in a case of fatality, his dependents, shall be paid a certain percentage of his average weekly wages but not more than a specified maximum amount nor less than a specified minimum amount, unless the wages of the injured are less than the minimum, in which case the actual wages shall be paid. This provision for indemnity benefits with variations in the percentage rates and the minimum and maximum amounts paid weekly is found in compensation acts generally.(1) A particular act may further provide several different percentage rates and sets of limits dependent on the type of injury or, in some cases, the number of dependents.(2) The minimum and maximum amounts paid weekly are sometimes not explicit but depend upon minimum and maximum weekly wages.

There are other factors affecting the weekly compensation, as the number of weeks per year used in calculating the annual earnings or the number of days per week used with the daily earnings in determining the average weekly wages.(3) These factors, which may be a part of the law or adopted as rules of administrative procedure, may be recognized through a corresponding adjustment in the percentage rate of weekly compensation. The effect of the limits which are imposed by some laws on the total amount paid for a single injury can be determined by methods not given here. Generally the effect of limits on the total amount paid is of minor importance.

It will be observed that the typical acts intend that the amount

(1) In these states fixed amounts independent of the wage of the injured are paid for the type of indemnity benefits specified:
Washington and Wyoming—all types of indemnity benefits.
Oregon—all types except temporary total disability.
Massachusetts and West Virginia—fatal cases, with widow and/or children dependents.

(2) See Table I. (3) See Table I, Column 8.

of the benefits shall depend, to some extent at least, on the wages paid the injured. The purpose of this paper is to examine, under conditions of changing wage levels, the relation of the compensation losses incurred to the exposure when expressed in payrolls and man-years, and to establish criteria for determining for which of these media there is greater responsiveness between losses and exposure.

LEGAL LIMIT FACTOR.

The legal limit factor may be defined as the ratio of the value of compensation benefits when evaluated with legal limits imposed to the value of the same benefits when evaluated without legal limits. The term may be used in reference to any one of the specific types of benefits or to a combination of them. When used without further qualification it will be assumed to apply to all of the indemnity benefits which are subject to legal limit restrictions. In this discussion "legal limit" will refer to the weekly limits only. A procedure for determining the legal limit factor is given in Appendix I.

EFFECT OF LEGAL LIMITS IN INDIVIDUAL CASES.

A graphical illustration of the effect of legal limits under a given law on the weekly compensation of individual cases is given in Chart I, in which the legal limit factor has been plotted against the weekly wage. It will be noted that if the wage is less than $\mathfrak{m}$, the minimum weekly compensation other than full wage, the factor is $1.00/r$; for wages between $\mathfrak{m}$ and w, which equals $\mathfrak{m}/r$, the factor follows the curve $F = \mathfrak{m}/rW$; for wages between w and $\overline{W}$, which is M/r, the factor is 1.00; and for wages in excess of $\overline{W}$, the factor follows the curve $F = M/rW$. If the law stipulates a fixed minimum compensation $\mathfrak{m}$ without the further condition "or actual wage", for wages less than $\mathfrak{m}$ the factor follows the broken part of the curve $F = \mathfrak{m}/rW$ above the solid line in the graph. In actual construction of the chart the general terms were given these specific values: $r = .66\frac{2}{3}$, $\mathfrak{m} = 8$, $w = 12$, $M = 20$, and $\overline{W} = 30$. As a matter of interest and for completeness of the graph, the values of the factor for the ex-

treme wages are indicated even though these have no practical significance.

EFFECT OF LEGAL LIMITS ON AGGREGATES.

The legal limit factor for a state is made up from an aggregate of such individual cases as shown in Chart I. This aggregate has a definite average wage and a distinct frequency arrangement which is known as the wage distribution.

In some states there are different legal limits and different compensation percentage rates for various types of benefits. In Chart II the graphs of the legal limit factors for total disability, permanent partial disability, and death, as well as the combination of all three, are shown for New York for the whole range of average wages. The part of the chart of practical significance has been sectioned off in the rectangle between the lines $W = 17.5$ and $W = 40$, and $F = .65$ and $F = 1.05$.

The combined factor is the legal limit factor for the indemnity benefits of New York. This and similar factors for other states in Chart III will be used when discussing and comparing the effect of the legal limits on losses. It will be noted that the graphs of the legal limit factors for an aggregate of losses are smooth and do not have the sudden breaks found in Chart I.

The legal limit factors for indemnity losses corresponding to the combined factor (curve IV, Chart II) for New York, for wage distributions with average wages from $17.50 to $40, are plotted in Chart III for ten important compensation states. In the case of Massachusetts, where the benefits for fatal cases are different fixed weekly amounts dependent on widow and/or number of children but independent of the wage of the deceased, the factor applies to all indemnity losses except fatality. If it is desired to get a factor which when applied to all indemnity losses produces an equivalent effect, .84 times the values shown in the chart should be used.

The important part of this chart is comprised between the wage ordinates $W = 20$ and $W = 35$ as will be noted from Table II in which the average wages of all industries are given for the ten states under consideration. For individual industries the factors may and do fall to the extreme left and right and even beyond the limits of the chart.

It will be observed that for Connecticut, which has a low compensation rate ($r = .50$), and a relatively high maximum weekly payment ($M = \$21$), and a very high effective maximum wage ($\overline{W} = \$42$), the limit factor diverges less from unity for the higher wage levels at the right of the chart than the other state factors. For Pennsylvania, where the compensation rate ($r = .65$) is relatively high, and the maximum weekly payment ($M = \$15$) and the effective maximum wage ($\overline{W} = \$23.08$) are relatively low, the legal limit factor diverges most widely from unity. In New Jersey, where the percentage rate of compensation in fatal cases is low ($r = .35$, etc.) and the fixed minimum weekly payment for all types of injury ($m = \$10$) is high, the result is a legal limit factor in excess of unity for the lower wage levels. Generally, for wage distributions where the average is very low, the minimum weekly compensation conditions are the more effective, while for distributions where the average is high the maximum weekly payments govern the limit factor. For the 1924-1930 wage levels (Table II), the effect of the minimum limits in most states is negligible.

VARIATION OF LOSSES WITH PAYROLL.

If compensation acts provided that indemnity benefits should be a fixed percentage of the weekly wages without any limitation as to weekly payments or as to the total amount to be paid, the payrolls would be an ideal medium to use for measuring exposure for indemnity losses. Medical benefits are not by law made responsive to wage levels, except by the rather vague and general provision in some of the acts that charges for industrial accidents should be no more than prevail for private treatment of such cases. There is, however, a long term responsiveness which correlates commodities in general with a price level and there is also a somewhat parallel variation of wages and medical costs between urban and rural communities. In this discussion this indirect and indefinite medical response to wage level will not be recognized. It will be assumed that there is no direct or immediate causal response of medical costs to variations in wage level. With this assumption it will be attempted to measure the degree of response which compensation losses, indemnity and

medical combined, give to any change in wage level at different levels.

INDEX OF VARIATION.

A condition which might be termed "perfect variation", where under adequate exposure an $x\%$ increase or decrease in wage level will be accompanied by an $x\%$ increase or decrease in losses, will be represented by the index 1.00. "Perfect variation" may be considered as existing under a law which provides no medical benefits and in which the compensation rate is a definite $100r\%$ of the wages without any qualifications whatsoever. By an *index of variation* y will be meant that the losses change at the rate of $100y\%$ of the rate under a case of "perfect variation", which has an index of variation 1.00.

Under this definition, the legal limit factor for limits applying to all indemnity losses is the index of variation of the indemnity losses with the payrolls. The measure of the variation of all losses with the payrolls will depend on a combination of the variable indemnity losses with the medical losses, which, under the assumption, do not vary. Consider the case where the legal limit factor for indemnity is .90 and where the medical constitutes 30% of the total losses. Here the index of variation of the total losses is $.90 \times (1-.30)$ or .63. This means that for a given increase in the wage level the change in the actual losses caused by this increase in wages is .63 of what the change would be if all losses (indemnity and medical) increased in the same ratio as the wages. This relationship may be represented more generally by the equation:

$$I = F(1 - R), \text{ where } \begin{aligned} I &= \text{index of variation} \\ F &= \text{legal limit factor} \\ R &= \text{medical ratio, medical losses to total losses} \end{aligned}$$

The index of variation thus far has been considered in a somewhat absolute sense: it has been considered in terms of an arbitrary condition representing "perfect variation". In actual operation the index of variation should be considered in a relative sense. Under a given compensation law the index of variation changes with the wage level and the medical ratio. The wage

level and medical ratio underlying the basic rate are represented by an index which becomes incorporated in the pure premiums. Any change when considered with respect to its effect on the pure premiums must be taken relative to the wage level and medical ratio already in effect.

RESPONSIVENESS BETWEEN LOSSES AND EXPOSURE WHEN MEASURED IN PAYROLLS AND MAN-YEARS.

In Appendix II, consideration has been given to the loss ratios developed when exposure is measured by payrolls and man-years under the same compensation act at various wage levels. A hypothetical set of rates for each exposure medium, which produces the expected loss ratio when operating at the basic wage level with index 1.00, is applied at another wage level with index $1 + x$ and the effect on the loss ratio is observed.

In the first part of the Appendix, formulas 14-18 have been developed for determining loss ratios under payroll and man-year exposure, and for determining the deviations of the actual loss ratios from the expected loss ratio, and also for determining the ratio of these deviations for the two exposure media. Formula 18 may be used to determine whether the deviation of the developed loss ratio from the expected loss ratio is greater under payroll or man-year exposure at a given wage level. It may be shown that the fraction in the formula is always negative and that under payroll exposure loss ratios are produced whose deviations from the expected are greater or less than those produced under the man-year exposure according as the value of the fraction is algebraically less or greater than -1.

In the second part of Appendix II, these formulas have been applied to calculate loss ratio indices for the same experience under payroll exposure and man-year exposure. The object of Table V is to show how loss ratios are affected by changes in wage level under payroll and man-year exposure media. In these states, for rates based on a $30 wage and with the medical assumed constant, the table shows greater responsiveness between losses and exposure when measured in man-years than when measured in payrolls. If the rates are based on lower wage levels, the greater responsiveness with man-year exposure

decreases and then disappears, beginning with Connecticut at the $27.50 average wage level. Conversely, if rates are based on higher wage levels, there is an increase in the greater responsiveness of man-year exposure.

A casual survey of formulas 14-18 would indicate only four variables R_1, F_1, F_{1+x}, and x, and of these, the last three are interrelated. The first three are functions of two or more variables. The medical ratio R is a function of i and m, and the legal limit factors F are functions or r, π and M (or w and $\overline{W}$), and W_n. The problem of determining the degree of responsiveness between compensation losses and exposure is an involved one requiring intensive study for its general solution.

TABLE I. IMPORTANT FEATURES OF COMPENSATION LAWS AFFECTING WEEKLY COMPENSATION PAYMENTS, TEN STATES

State	Type of Injury	Per Cent Rate r	Weekly Compensation Limits		Weekly Wage Limits		Average Weekly Wage(d)
			Min. m	Max. M	Min. w	Max. W	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
California	All	65% (a)	$4.17	$25.00	$6.41	$38.46	$AE/52$
Connecticut	All	50	5.00	21.00	10.00	42.00	(26 wks. E) / (no. wks. worked)
Massachusetts	Fatal	Compensation is scheduled amounts, regardless of wage					
	Dism. & L of U	66⅔	4.00	10.00	6.00	15.00	$AE/(52 -$ wks. lost if >2 wks.)
	Other	66⅔	9.00 (b)	18.00	13.50	27.00	
Michigan	All	66⅔	7.00	18.00	10.50	27.00	$DW \times 6$
Missouri	PTD over 300 wks.	25	6.00	20.00	24.00	80.00	No provision but
	Other	66⅔	6.00 (c)	20.00	9.00	30.00	$AE = 300 \times DW$
New Jersey	Fatal	35-60	10.00 (b)	20.00	Var.	Var.	$DW \times 5, 5½, 6,$
	Other	66⅔	10.00 (b)	20.00	15.00	30.00	6½ or 7
New York	Total Dis.	66⅔	8.00 (b)	25.00	12.00	37.50	
	Partial Dis.	66⅔	8.00 (b)	20.00	12.00	30.00	$(DW \times 300)/52$
	Fatal	15-66⅔	—	Var.	—	34.62	
Pennsylvania	Fatal	16-65	Various	Var.	12.00	24.00	$DW \times 5, 5½, 6, 6½$
	Other	65	7.00 (b)	15.00	10.77	23.08	or 7; or $AE/50$
Texas	All	60	7.00	20.00	11.67	33.33	$(DW \times 300)/52$
Wisconsin	Fatal	65	6.83	19.50	10.50	30.00	$(DW \times 300)/50$
	Other	70	7.35	21.00	10.50	30.00	

(a) In permanent disability cases involving life pensions becomes various after 240 weeks. (b) Or wage, if less than minimum compensation. (c) For temporary total, footnote (b) applies. (d) AE = annual earnings, DW = daily wage.

General Notes—In cases of partial disability, excluding scheduled specific dismemberments and loss of use (in Michigan dismemberment only), the rate r applies to the wage loss instead of total wage, except in New Jersey cases and in California and Missouri permanent partial cases, where it applies to total wage. The minimum limit does not apply in temporary partial disability except in New Jersey and New York, nor does it apply in permanent partial disability except in California, Missouri, New Jersey, and New York.

TABLE II. AVERAGE WEEKLY WAGES, ALL INDUSTRIES
FROM NATIONAL COUNCIL SEMI-ANNUAL WAGE CALL DATA, AND PENNSYLVANIA BUREAU POLICY YEAR DATA

STATE	CALENDAR YEAR						
	1924	1925	1926	1927	1928	1929	1930
California	$32.37	$32.57	$32.29	$31.90	$31.85	$31.86	$31.45
Connecticut	27.58	28.03	28.07	28.91	28.09	28.72	28.92
Massachusetts	27.11	27.35	27.37	27.09	27.85	27.51	28.00
Michigan	30.25	29.95	31.83	30.18	31.98	32.12	30.57
Missouri	—	—	—	27.04	27.26	26.90	26.47
New Jersey	29.89	31.82	31.84	32.37	33.26	32.30	32.58
New York	31.31	32.02	32.52	32.87	33.52	33.58	33.46
Pennsylvania	27.80	28.19	28.40	28.24	27.87	27.47	—
Texas	27.27	26.07	26.20	27.55	26.85	26.83	26.78
Wisconsin	25.81	26.92	27.61	28.02	28.55	28.80	28.23

TABLE III. PERCENTAGE DISTRIBUTION OF LOSSES IN CLASSIFICATION EXPERIENCE BY RATIO OF MEDICAL LOSSES TO TOTAL LOSSES; AND STATE AVERAGE MEDICAL RATIOS

Medical Ratio Group	Calif.	Conn.	Mass.	Mich.	Mo.	N. J.	N. Y.	Pa.	Texas	Wisc.
.10-.19	—	—	1%	1%	1%	28%	24%	9%	—	1%
.20-.29	1%	4%	35	17	55	54	55	37	55%	22
.30-.39	41	44	52	67	35	17	20	29	35	60
.40-.49	39	41	10	14	9	1	1	21	9	15
.50-.59	18	10	1	1	—	—	—	4	1	2
.60-.69	1	1	1	—	—	—	—	—	—	—
Average Medical Ratio	.42	.41	.32	.34	.32	.27	.26	.31	.29	.34

APPENDIX I.

DETERMINATION OF FACTORS FOR THE EFFECT OF LEGAL LIMITS ON WEEKLY COMPENSATION

1. FROM STANDARD WAGE DISTRIBUTION.

The wage distribution, Table IV, used as the standard, is the distribution given in Table I of Mowbray's paper on the effect of limits (Proceedings, Volume IX, p. 213). It has been graduated by Carver's method (Proceedings, Volume VI, pp. 52-72), projected to lower wage groups, and extended to 4,452 cases in order to make a total wage of $100,000 for convenience in using the table. Some arbitrary minor adjustments were necessary to bring the total to exactly $100,000. The column headings of Table IV are explained in its footnotes.

Let it be required to determine the legal limit factor under this wage distribution for a law compensating at the rate of 60% of wages subject to a maximum weekly payment of $18 and a minimum of $6 or the actual wage if under $6.

It will be observed that:

1. For weekly wages between $10, the effective minimum wage, and $30, the effective maximum wage, the weekly compensation is 60% of the wages.
2. For wages in excess of $30 the compensation is $18.
3. For wages between $10 and $6 the compensation is $6.
4. For wages under $6 the compensation is the actual wage.

From Table IV:

	NUMERICALLY	SYMBOLICALLY
1. Total weekly wages between $30 and $10. (Col. 7, line 28 – line 8.)	78176 – 961	$\Sigma C_{l_2} - \Sigma C_{l_1}$
Cost, 60% of wages.	.60 × 77215	$r(\Sigma C_{l_2} - \Sigma C_{l_1})$
2. No. of cases over $30. (Col. 6, line 29.)	620	$\Sigma N'_{l_2+1}$
Cost, $18 per case.	18 × 620	$M\Sigma N'_{l_2+1}$
3. No. of cases between $10 and $6 (Col. 5, line 8 – line 4.)	126 – 25	$\Sigma N_{l_1} - \Sigma N_{l_3}$
Cost, $6 per case.	6 × 101	$m(\Sigma N_{l_1} - \Sigma N_{l_3})$
4. Actual wages under $6. (Col. 7, line 4.)	111	ΣC_{l_3}
5. Total compensation cost, without limits.	.60 × 100,000	$r(100{,}000)$

If the compensation costs of the first four are added (in order 4, 3, 1, 2) and then divided by the cost in 5, the legal limit factor is obtained.

Numerically:

$$F = \frac{111 + 6 \times 101 + .60 \times 77215 + 18 \times 620}{.60 \times 100{,}000} = .9701$$

Symbolically:

$$F = \frac{\Sigma C_{l_3} + \mathfrak{m}\,(\Sigma N_{l_1} - \Sigma N_{l_3}) + r\,(\Sigma C_{l_2} - \Sigma C_{l_1}) + M\,\Sigma N'_{l_2+1}}{r\,(100{,}000)}, \text{ or}$$

$$\text{I.}\quad 100{,}000\,F = \frac{1}{r}\Sigma C_{l_3} + w(\Sigma N_{l_1} - \Sigma N_{l_3}) + \Sigma C_{l_2} - \Sigma C_{l_1} + \overline{W}\,\Sigma N'_{l_2+1}$$

since $\mathfrak{m}/r = w$, and $M/r = \overline{W}$

If the weekly minimum $\mathfrak{m}$ applies also in cases where the wage is under $\mathfrak{m}$, the terms involving l_3 become irrelevant and are disregarded. The formula then becomes:

$$\text{II.}\quad 100{,}000\,F = w\,\Sigma N_{l_1} + \Sigma C_{l_2} - \Sigma C_{l_1} + \overline{W}\,\Sigma N'_{l_2+1}$$

An analogous procedure may be followed to derive the formula in Case III when the law requires that the weekly wages shall not be taken in excess of $\overline{W}$ nor below w and in Case IV when the only restriction on wages is that they shall not be taken in excess of $\overline{W}$.

2. FROM ANY WAGE DISTRIBUTION.

If it is assumed that graduated wage distributions of like number of cases and the same average wage are substantially alike and that wage level changes may be represented approximately by percentage changes throughout the distributions affected, then a single standard wage distribution may be used to determine the legal weekly limit factor for any distribution having a known average wage.*

* These two assumptions are, in effect, equivalent to the assumptions regarding equal percentage departures made by Mowbray. See Mowbray—*Proceedings*, Volume IX, page 239, for tests as to accuracy of results produced. It should be recognized that the same degree of accuracy cannot be expected when the method is applied to distributions having very low or very high average wages.

In Chart IV, the wage distribution given in column 3, Table IV, is represented by the frequency curve D. The same distribution after all wages have been increased by a factor, $1/v$, is represented by the curve D'. The new curve is obtained by moving each of the ordinates of D to the right until its abscissa equals $1/v$ times the old. Conversely, D may be obtained from D' by compressing each abscissa of the latter to v times its former size. Under the assumptions stated the curve D' may be considered as representative of wage distributions whose average wage is $1/v$ times the average wage of D.

Let it be required to find the legal limit factor under a wage distribution D' for a law providing a compensation rate of $100r\%$ of wages with the weekly maximum compensation of M and a minimum of $\mathfrak{m}$. The effective maximum wage corresponding to M is M/r or $\overline{W}$, and the effective minimum corresponding to $\mathfrak{m}$ is $\mathfrak{m}/r$ or w. These wages w and $\overline{W}$ at which the limits become effective are fixed and are the same for all wage distributions. The ordinate on D' for the wage $\overline{W}$ cuts the curve at P'. The corresponding point on D is P, which has for its abscissa $v\overline{W}$. That is, an effective maximum wage $v\overline{W}$ in the D distribution, is relatively the same as the effective maximum wage $\overline{W}$ in the D' distribution.

Similarly it may be shown that the effective minimum wage w in the D' distribution is relatively the same as the effective minimum wage vw in the D distribution. If for any frequency distribution D' underlying a law, there be established for its w and $\overline{W}$ the corresponding effective minimum vw and effective maximum $v\overline{W}$ in the standard distribution D by means of the relation $v = W_s/W_n$, then the legal limit factor for D' may be found from D by entering Table IV with an effective minimum wage of vw and effective maximum wage of $v\overline{W}$.

TABLE IV. LEGAL LIMIT FACTOR TABLE — $W_s = 22.46$

l	W_l	N_l	C_l	ΣN_l	$\Sigma N'_l$	ΣC_l
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	2.50	3	7	3	4,452	7
2	3.50	5	18	8	4,449	25
3	4.50	7	31	15	4,444	56
4	5.50	10	55	25	4,437	111
5	6.50	14	91	39	4,427	202
6	7.50	20	150	59	4,413	352
7	8.50	28	238	87	4,393	590
8	9.50	39	371	126	4,365	961
9	10.50	54	567	180	4,326	1,528
10	11.50	72	828	252	4,272	2,356
11	12.50	94	1,175	346	4,200	3,531
12	13.50	119	1,606	465	4,106	5,137
13	14.50	146	2,117	611	3,987	7,254
14	15.50	175	2,713	786	3,841	9,967
15	16.50	203	3,349	989	3,666	13,316
16	17.50	229	4,008	1,218	3,463	17,324
17	18.50	249	4,606	1,467	3,234	21,930
18	19.50	263	5,129	1,730	2,985	27,059
19	20.50	269	5,514	1,999	2,722	32,573
20	21.50	269	5,784	2,268	2,453	38,357
21	22.50	260	5,850	2,528	2,184	44,207
22	23.50	247	5,804	2,775	1,924	50,011
23	24.50	230	5,635	3,005	1,677	55,646
24	25.50	208	5,304	3,213	1,447	60,950
25	26.50	187	4,956	3,400	1,239	65,906
26	27.50	165	4,537	3,565	1,052	70,443
27	28.50	144	4,104	3,709	887	74,547
28	29.50	123	3,629	3,832	743	78,176
29	30.50	105	3,202	3,937	620	81,378
30	31.50	88	2,772	4,025	515	84,150
31	32.50	74	2,405	4,099	427	86,555
32	33.50	62	2,077	4,161	353	88,632
33	34.50	52	1,794	4,213	291	90,426
34	35.50	42	1,491	4,255	239	91,917
35	36.50	35	1,278	4,290	197	93,195
36	37.50	29	1,087	4,319	162	94,282
37	38.50	24	924	4,343	133	95,206
38	39.50	20	790	4,363	109	95,996
39	40.50	16	648	4,379	89	96,644
40	41.50	13	540	4,392	73	97,184
41	42.50	11	467	4,403	60	97,651
42	43.50	9	392	4,412	49	98,043
43	44.50	7	311	4,419	40	98,354
44	45.50	6	273	4,425	33	98,627
45	46.50	5	233	4,430	27	98,860
46	47.50	4	190	4,434	22	99,050
47	48.50	3	145	4,437	18	99,195
48	49.50	3	149	4,440	15	99,344
49	50.50	2	101	4,442	12	99,445
50	51.50	2	103	4,444	10	99,548
51	52.50	2	105	4,446	8	99,653
52	53.50	1	53	4,447	6	99,706
53	54.50	1	55	4,448	5	99,761
54	55.50	1	56	4,449	4	99,817
55	56.50	1	57	4,450	3	99,874
56	60.50	1	60	4,451	2	99,934
57	66.50	1	66	4,452	1	100,000

Note: The symbols in the column heads of Table IV denote the following:

l = line number of group.
W_l = average wage of group.
N_l = number of cases in group.
C_l = total wage of group.
ΣN_l = number of cases cumulated downward.
$\Sigma N'_l$ = number of cases cumulated upward.
ΣC_l = total wages cumulated downward.

Formulas:

Case I. Compensation rate $= r$, minimum weekly compensation $= \mathfrak{m}$ or wages, maximum weekly compensation $= M$.

$$100{,}000\,F = \frac{1}{r}\Sigma C_{l_3} + w(\Sigma N_{l_1} - \Sigma N_{l_3}) + \Sigma C_{l_2} - \Sigma C_{l_1} + \overline{W}\,\Sigma N'_{l_2+1}$$

Case II. Compensation rate $= r$, minimum weekly compensation $= \mathfrak{m}$, maximum weekly compensation $= M$.

$$100{,}000\,F = w\,\Sigma N_{l_1} + \Sigma C_{l_2} - \Sigma C_{l_1} + \overline{W}\,\Sigma N'_{l_2+1}$$

Case III. Compensation rate $= r$, minimum weekly wage $= w$, maximum weekly wage $= \overline{W}$.

$$100{,}000\,F = w\,\Sigma N_{l_1} + \Sigma C_{l_2} - \Sigma C_{l_1} + \overline{W}\,\Sigma N'_{l_2+1}$$

Case IV. Compensation rate $= r$, maximum weekly wage $= \overline{W}$.

$$100{,}000\,F = \Sigma C_{l_2} + \overline{W}\,\Sigma N'_{l_2+1}$$

Where

W_s = average wage, standard distribution, or 22.46.
W_n = average wage, new distribution.
$v = W_s \div W_n$.
r = compensation rate expressed in decimals.
$u = v \div r$.
$\mathfrak{m}$ = minimum weekly compensation.
M = maximum weekly compensation.
$w = u\,\mathfrak{m}$, effective minimum wage.
$\overline{W} = u\,M$, effective maximum wage.
F = legal limit factor.
l_1 is that value of l for which W_l is equal to or next lower than w.
l_2 is that value of l for which W_l is equal to or next lower than $\overline{W}$.
l_3 is that value of l for which W_l is equal to or next lower than $v\mathfrak{m}$.

APPENDIX II.

LOSS RATIOS UNDER PAYROLL AND MAN-YEAR EXPOSURES

1. DERIVATION OF FORMULAS.

Consider two industrial conditions alike in every respect except the underlying wage level, and consider the same compensation act as effective in each. Let one industrial condition be denoted by "I" and its wage level index be 1.00. Let the other industrial condition be denoted by "II" and its wage level index be $1+x$.

Using certain assumptions and definitions which have been designated by "a", expressions for pure premium with weekly limits, expected losses, premium, and loss ratio are developed for condition I, first for payroll exposure, then for man-year exposure. The corresponding expressions are then developed for condition II, on the assumption that the rates effective in condition I have been retained intact. These developments are shown in the tabular form following:

ITEMS	INDUSTRIAL CONDITION	
	I	II
For Payroll Exposure		
1. Wage Level Index	a 1.	a $1+x$
2. Payroll	a P	$(1+x)P$
3. Limit Factor	a F_1	a F_{1+x}
4. Pure Premium, no limits	a $i+m$	$i+m/(1+x)$
5. Pure Premium, with limits	$F_1 i+m$	$F_{1+x}i+m/(1+x)$
6. Expected Losses, (2) × (5)	$P[F_1 i+m]$	$(1+x)P[F_{1+x}i+m/(1+x)]$
7. Premium, (6) ÷ E	$P[F_1 i+m]/E$	$(1+x)P[F_1 i+m]/E$
8. Loss Ratio (6) ÷ (7)	E	$E[F_{1+x}i+m/(1+x)]/[F_1 i+m]$
9. Deviation of Loss Ratio from Expected, E − (8)	0	$E[F_1 i - F_{1+x}i+mx/(1+x)]/[F_1 i+$
For Man-Year Exposure		
10. Premium, Item 7 I	$P[F_1 i+m]/E$	$P[F_1 i+m]/E$
11. Expected Losses, Item 6	$P[F_1 i+m]$	$(1+x)P[F_{1+x}i+m/(1+x)]$
12. Loss Ratio, (11) ÷ (10)	E	$(1+x)E[F_{1+x}i+m/(1+x)]/[F_1 i+m$
13. Deviation of Loss Ratio from Expected, E − (12)	0	$E[F_1 i - (1+x)F_{1+x}i]/[F_1 i+m]$

; Ratio and Deviation Formulas Simplified *

"Payroll" Loss Ratio, II (Item 8 II) $= E\left[(1-R_1)\frac{F_{1+x}}{F_1} + \frac{R_1}{1+x}\right]$

"Man-Year" Loss Ratio, II (Item 12 II) $= E\left[(1-R_1)(1+x)\frac{F_{1+x}}{F_1} + R_1\right]$

"Payroll" Loss Ratio Deviation, II (Item 9 II) $= E\left[1-\frac{R_1}{1+x} - (1-R_1)\frac{F_{1+x}}{F_1}\right]$

"Man-Year" Loss Ratio Deviation, II (Item 13 II) $= E(1-R_1)\left[1-(1+x)\frac{F_{1+x}}{F_1}\right]$

Ratio of Loss Ratio Deviations, II

(17) ÷ (16)

$$\frac{\text{"Man-Year" Deviation}}{\text{"Payroll" Deviation}} = \frac{1-(1+x)\frac{F_{1+x}}{F_1}}{1-\frac{F_{1+x}}{F_1}+\frac{R_1}{1-R_1}\cdot\frac{x}{1+x}}$$

Where P = payroll.
F_1 = legal limit factor at wage level 1.00.
F_{1+x} = legal limit factor at wage level $1+x$.
i = indemnity pure premium without legal limits, Condition I.
m = medical pure premium, Condition I.
E = expected loss ratio.
R_1 = medical ratio, Condition I.

* Simplification of Formulas.

14. "Payroll" Loss Ratio (Item 8 II)

$$= E\left[F_{1+x}\,i+\frac{m}{1+x}\right] \Big/ \left[F_1\,i+m\right]$$

$$= E\left[F_{1+x}+\frac{F_1 m}{F_1 i(1+x)}\right] \Big/ F_1\left[1+\frac{m}{F_1 i}\right]$$

$$= E\left[\frac{F_{1+x}}{F_1}+\frac{R_1}{(1-R_1)(1+x)}\right] \Big/ \frac{1}{1-R_1}$$

$$= E\left[(1-R_1)\frac{F_{1+x}}{F_1}+\frac{R_1}{1+x}\right]$$

since $F_1 i =$ indemnity pure premium under Condition I and $\frac{m}{F_1 i} = \frac{R_1}{1-R_1}$

By similar procedures formulas 15, 16, and 17 may be derived.

2. CALCULATION OF LOSS RATIO INDICES.

In Table V, loss ratio indices have been calculated for the ten states under consideration, on the assumption that the rates have been so keyed to a wage level of $30 average weekly wage that the permissible loss ratio would be produced if the conditions remained unchanged. It is assumed further that the medical ratio R given in Table III applies at this wage level and that the only factor which varies from those in the rate calculation is the wage level, for which the percentage change applies everywhere so that the relativity of classification payroll distribution is preserved. There is a lag between the wages used in determining the injured's weekly compensation and those underlying the premiums because past periods are used in determining average weekly wages (see Table I, Column 8). No allowance is made for this lag. This is equivalent to an assumption that the wage level has been in effect for a sufficient period to overcome the lag.

The loss ratio indices were calculated using formulas 14 and 15 for seven different wage levels which are shown in the column headings of the Table. Directly underneath each average wage is shown the wage level index based on 1.000 for the $30 average wage. In the body of the Table are shown loss ratio indices based on 1.000 for the expected loss ratio underlying the rate level. Two sets of indices are given for each state. On the first line marked "P" the indices are for a set of classification rates based on payroll exposure, and on the second line marked "M" the indices are for a set of rates based on man-year exposure. It is assumed that in each case the rates produce the permissible loss ratio at the $30 average wage level. For each exposure basis its own set of rates is retained for all seven wage levels. The indices in Table V may be viewed as applying to the state as a whole, with the relativity of classification payroll distribution preserved, or to a particular classification or group of classifications within the state.

TABLE V

LOSS RATIO INDICES—PAYROLL AND MAN-YEAR EXPOSURE
Showing Loss Ratio Indices based on rate level keyed to a $30 average weekly wage level and a medical Ratio R_1 taken from Table III.

Index for expected loss ratio = 1.000
Payroll exposure loss ratio index on line P
Man-year exposure loss ratio index on line M

STATE	Exposure	AVERAGE WAGE OF DISTRIBUTION Wage Level Index, $1+x$						
		$20.00	$22.50	$25.00	$27.50	$30.00	$32.50	$35.00
		.667	.750	.833	.917	1.000	1.083	1.167
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
California	P	1.233	1.161	1.101	1.048	1.000	.955	.912
$R_1 = .42$	M	.822	.870	.917	.961	1.000	1.034	1.064
Connecticut	P	1.221	1.151	1.093	1.043	1.000	.960	.921
$R_1 = .41$	M	.814	.863	.911	.957	1.000	1.039	1.075
Massachusetts	P	1.314	1.220	1.141	1.066	1.000	.941	.886
$R'_1 = .43$*	M	.876	.915	.951	.978	1.000	1.020	1.034
Michigan	P	1.293	1.213	1.138	1.067	1.000	.938	.881
$R_1 = .34$	M	.863	.910	.948	.978	1.000	1.016	1.028
Missouri	P	1.247	1.180	1.117	1.058	1.000	.944	.891
$R_1 = .32$	M	.832	.885	.930	.970	1.000	1.023	1.040
New Jersey	P	1.257	1.181	1.116	1.055	1.000	.949	.900
$R_1 = .27$	M	.838	.886	.930	.968	1.000	1.028	1.051
New York	P	1.198	1.143	1.094	1.047	1.000	.954	.909
$R_1 = .26$	M	.799	.857	.912	.960	1.000	1.033	1.060
Pennsylvania	P	1.347	1.250	1.160	1.076	1.000	.932	.871
$R_1 = .31$	M	.899	.938	.966	.987	1.000	1.009	1.016
Texas	P	1.210	1.151	1.098	1.049	1.000	.953	.906
$R_1 = .29$	M	.807	.863	.915	.962	1.000	1.032	1.057
Wisconsin	P	1.257	1.186	1.121	1.059	1.000	.944	.891
$R_1 = .34$	M	.839	.889	.934	.971	1.000	1.022	1.040

* .43 is composed of Medical .32, Fatal .11

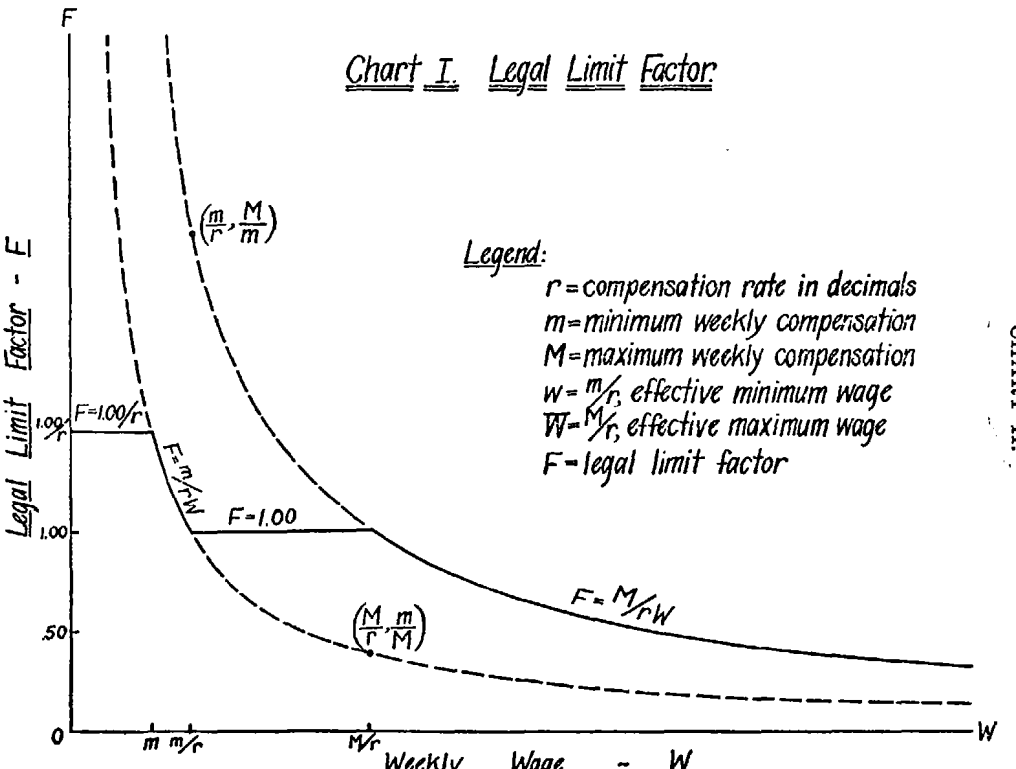


Chart I. Legal Limit Factor
Legend:
r = compensation rate in decimals
m = minimum weekly compensation
M = maximum weekly compensation
w = m/r, effective minimum wage
W = M/r, effective maximum wage
F = legal limit factor
F
Legal Limit Factor - F
1.09/r
1.00
.50
0
F=1.00/r
F=m/rW
F=1.00
F=M/rW
(m/r, M/m)
(M/r, m/M)
m
m/r
M/r
W
Weekly Wage - W

CHART II.

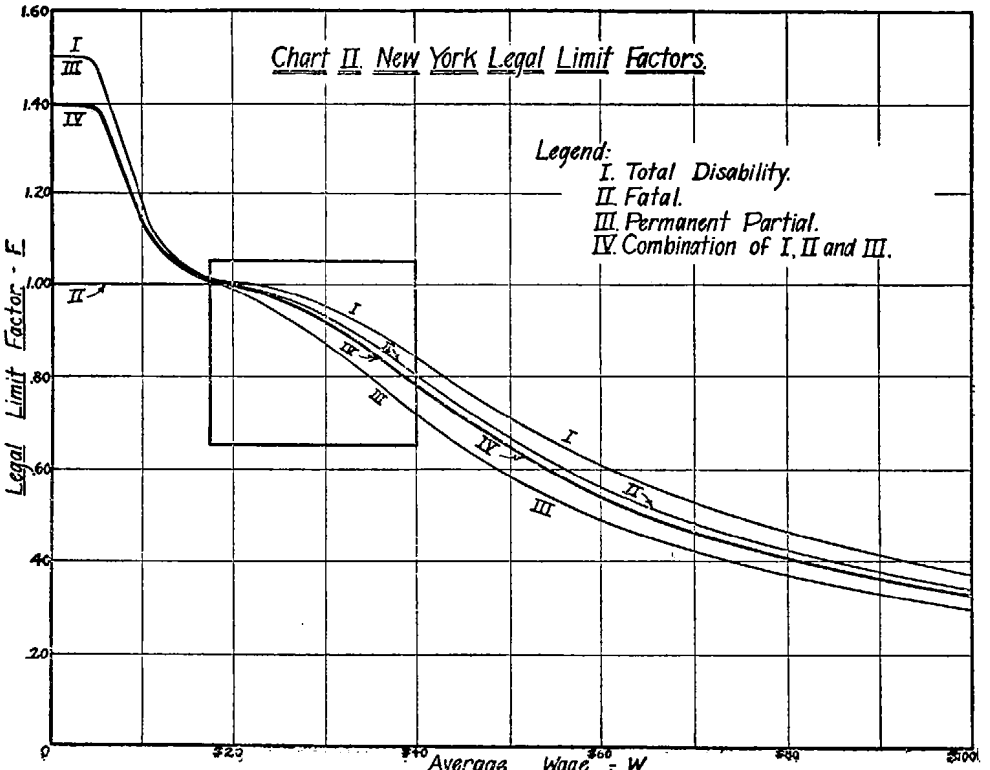


Chart II. New York Legal Limit Factors.
Legend:
I. Total Disability.
II. Fatal.
III. Permanent Partial.
IV. Combination of I, II and III.
Legal Limit Factor - F
Average Wage - W
1.60
1.40
1.20
1.00
.80
.60
40
.20
0
$20
$40
$60
$80
$100

CHART III.

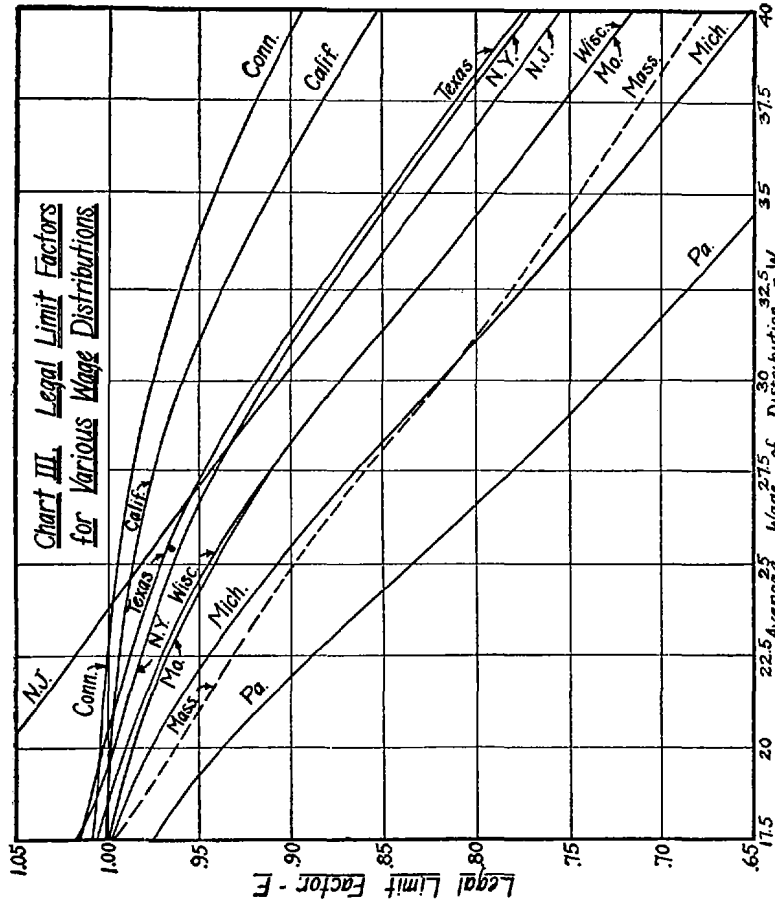
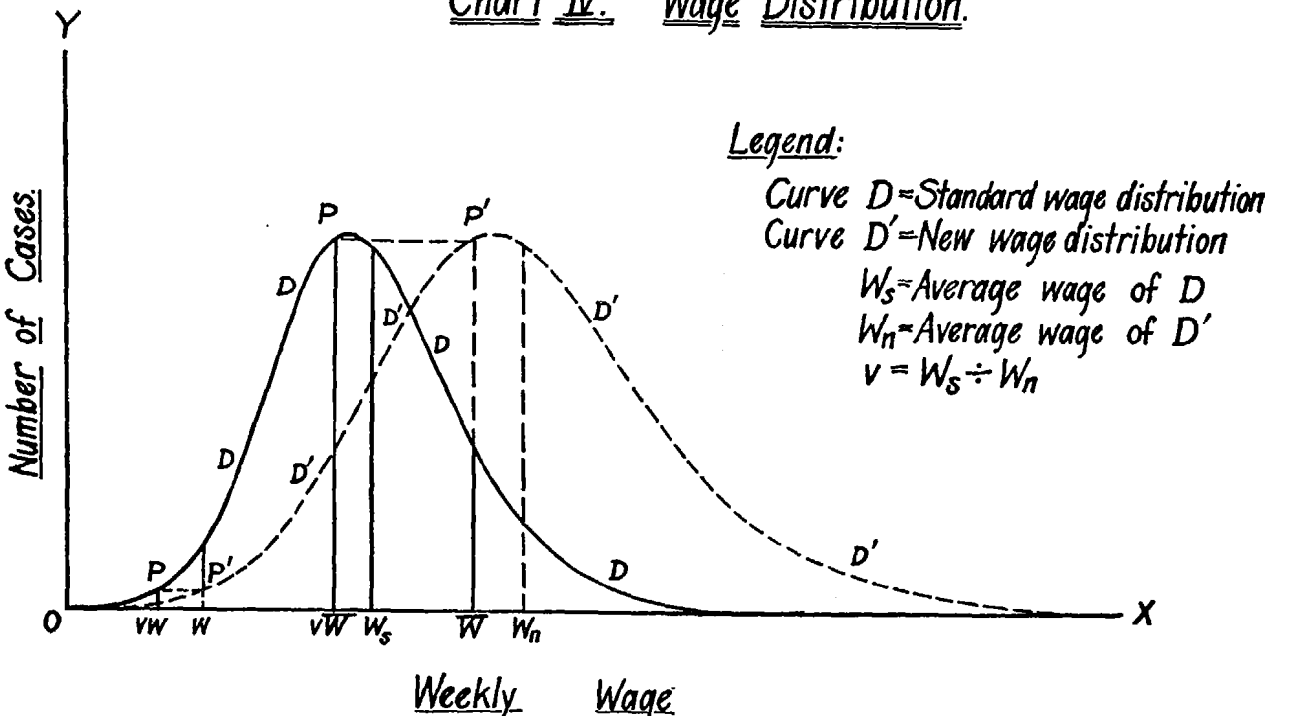


Chart III. Legal Limit Factors for Various Wage Distributions
Conn.
Calif.
Texas
N.Y.
N.J.
Wisc.
Mo.
Mass.
Mich.
Pa.
Legal Limit Factor - E
1.05
1.00
.95
.90
.85
.80
.75
.70
.65
17.5
20
22.5
25
27.5
30
32.5
35
37.5
40
Average Wage of Distribution - W

Chart IV. Wage Distribution.



ABSTRACT OF THE DISCUSSION OF PAPERS READ AT THE PREVIOUS MEETING

THE FUNCTION OF ADMINISTRATIVE STATISTICS IN CASUALTY INSURANCE—ROBERT S. HULL

VOLUME XVII, PAGE 179

WRITTEN DISCUSSION

MR. W. W. GREENE:

Mr. Hull's interesting and timely paper deals with the very core of the work of this Society; for it should be the chief object of the Society to train men competent to discharge the duties described by Mr. Hull, or at least the more important of them.

Mr. Hull's outline of the duties of "administrative statistician" seems, if anything, too broad. Doesn't his paper discuss two jobs rather than one?

In a large company there probably is need for the "efficiency expert" or "budget director" as such. The function of this factotum is to delve into any and all details of the expense ratio. Reduced to the absurd, his mission is to make sure that not even a new lead pencil is issued except upon a requisition, describing not only the contemplated use of the new pencil, but also what became of the old pencil, and why.

Admitting that such a job and such a viewpoint has a proper place in a sizeable organization, this is not the job nor the viewpoint of the "comptroller", as the present writer prefers to call him. A small company can worry along, and some undoubtedly prosper, without a budget director. On the other hand, no company, I believe, can safely do without a capable comptroller, or someone who exercises his functions with capability, under whatever name.

The comptroller is that member of the company's official family whose particular aim is to maintain as much *control* as is humanly possible over the company's results as measured in terms of gain or loss. In respect of profits, his mental attitude is reflected in the formula: "If not, why not; if so, why?" He should expose the reasons for profit or loss but not rest content with mere analysis of past results. Rather, in the light of such

results he should formulate and recommend, nay, urge a corrective and constructive program as to future company policy.

Normally, the comptroller reports to the chief executive officer of the company rather than to the board of directors. To the chief executive the comptroller presents not only the facts which he has collected but also his analyses and recommendations. It is the prerogative of the active head of the company to determine the extent to which such facts, analyses and recommendations shall be presented to the board.

As for the facts periodically developed by the comptroller, they should at least include the following:

1. Monthly gain and loss account (underwriting and investment exhibit).—This exhibit will be most helpful if it does not follow the form of the official underwriting and investment exhibit, but rather shows the result of the company's "actual" operations together with a reconciliation of such actual result with the change in surplus indicated by the official exhibit.

"Actual" underwriting results embody the following points of difference as compared with the statement basis:

A—Reinsurance is taken into account whether admitted or non-admitted.

B—Earned commissions, rather than written commissions, are considered.

C—Reserves for liability and compensation business are taken on basis of the company's estimates rather than at the statement figure.

Undoubtedly there is room for difference of opinion as to the specific form of the suggested gain and loss account. This is particularly true as respects the treatment of certain investment items. Probably it will be generally conceded that changes in the difference existing between the book value and the market value of investments should not be treated as part of actual results. The situation is not quite so clear with respect to gains or losses realized upon sale or maturity of investments. From one viewpoint, such gains or losses are "actual", but from another, this might not be regarded as the truest interpretation of the facts, since cash derived from the sale or maturity of invest-

ments is normally re-invested and the asset thus created continues to be subject to the effect of market price fluctuations in either direction.

If the company's results are shown under the following main headings, the position will be made entirely clear without having to resolve the dubious point just discussed.

1—"Actual" underwriting results.

2—Earned interest and dividend income (net of investment expense).

3—Gain or loss upon sale or maturity of investments.

4—Change in difference between book and market value of securities.

5—Statement charges and credits (underwriting only).

The definition of "actual underwriting results" given in the preceding paragraph implies that the following, in our analytical exhibit, will be treated as statement charges (or credits) in respect of underwriting.

A—Change in the commission equity in the unearned premium reserve.

B—Change in premium and loss reserves relating to non-admitted reinsurance.

C—Change in the Schedule P equity, i. e., in the difference between the company's estimated outstanding losses on the Schedule P lines and the reserve as required by Schedule P.

If the company's collection experience warrants such a course, some portion of the change in the amount of premiums (less commissions) more than ninety days old, may also be treated as a statement charge (or credit). For that matter, there may be other items not mentioned above which in the case of a given company may properly be treated as statement charges (or credits), rather than reflected in actual results. An example of this would be a balance due from a financially responsible but unlicensed reinsurer.

It should be added that in the suggested type of gain and loss

account, it is desirable to display the underwriting results under the following headings:

Direct business
Incoming reinsurance
Outgoing reinsurance
Total business (net of reinsurance).

2. At least quarterly (preferably, each month), that portion of the analytical gain and loss account above described which deals with underwriting should be supported by figures showing the results for each kind of insurance. This supporting information should be shown separately for direct business, incoming reinsurance, outgoing reinsurance, and net total business. The following displays, in principle, the column headings for the supporting exhibit relating to the actual results on direct business:

Kind of Insurance	(1) Premiums Written	(2) Premiums Earned	(3) Actual Loss and Loss Expense Incurred (net of Salvage)	(4) Loss Ratio (3) ÷ (2)
(5) Commission Ratio	(6) Commissions Earned (2) × (5)	(7) Overhead and Taxes Incurred	(8) Actual Underwriting Gain {(2) — [(3) + (6) + (7)]}	

Similar exhibits should be presented reflecting actual results on incoming reinsurance, outgoing reinsurance, and net total business. In addition to the presentation of actual results, there should be shown a reconciliation between such actual results for net total business and the corresponding statement results. The following illustrates the column headings which would be required for this purpose:

Kind of Insurance	(1) Actual Underwriting Gain	(2) Increase in Schedule "P" Equity	(3) Increase in Commission Equity
(4) Increase in Premium and Loss Reserves for Non-Admitted Reinsurance	(5) Total Statement Charges (2) + (3) + (4)	(6) Statement Underwriting Gain (1) — (5)	

A thorough discussion of how to treat overhead expense in the various underwriting exhibits would necessarily be lengthy. In

the monthly gain and loss account proper, i. e., that dealing with the company's total results, it may be justifiable to show overhead expense only in respect of net total business, since such a treatment clarifies the comparison between results on direct business, incoming reinsurance, and outgoing reinsurance, respectively. Such a handling of the overhead expense element would be misleading in case of the supporting exhibits relating to underwriting results by kind of insurance. Where the company accepts very little reinsurance, it may be desirable to charge the entire overhead for any given kind of insurance to direct business. On the other hand, if the company accepts a considerable volume of reinsurance, an appropriate amount of overhead should be charged thereto.

3. At least quarterly there should be presented a statement of the underwriting results of each producing unit (agent or broker). In the task of improving the company's underwriting, the study of the individual producer's experience is the most important factor, since under present conditions, the company in great measure is obliged to underwrite the producer rather than the individual risk or manual classification. It should be unnecessary to state that the experience of the producer is meaningless unless incurred losses are compared with earned premiums and proper allowance is made for the overhead and tax ratios. In addition to the general periodic survey of underwriting results by producer, the comptroller should devise an adequate plan whereby the producer's record is brought to his attention immediately when loss payments or reported claims, as compared with premium writings, mount rapidly.

As already stated, the comptroller's primary interest as respects the company's operations is in the total result. By this, it is not implied that he is not interested in the expense ratio, but rather that he will more effectively serve the company if he consistently views the expense element as a factor in the total result, and does not devote an undue portion of his efforts to minute analyses of the various phases of expenses, which latter field is more properly that of the budget director.

The main hope for profit on the part of casualty companies lies in improving the loss ratio. Frequently such improvement cannot be had without spending money, and perhaps a great deal

of it, in directions which assure skillful selection of business, prevention of avoidable losses, and effective handling of claims. The comptroller, therefore, will not "view with alarm" properly directed expenditures tending to promote a loss ratio so low as to produce a black figure at the bottom of the column under normal business conditions.

Mr. Hull states, by implication, that generally in the American casualty business the actuarial viewpoint has not been accorded the weight which it deserves. This, we think, is quite true, but in the writer's opinion, the fault lies partly with his actuaries.

To serve his company adequately, the actuary must not only be technically qualified, but he must have courage, sane judgment, and the selling ability requisite to secure the acceptance of his views, in a reasonable degree.

Among British insurance companies, a goodly proportion of the executives, including chief executives, are members of a recognized actuarial society. The majority of the British companies transacting casualty business conduct a life insurance business as well, and, in large measure, the influence of the life insurance viewpoint accounts for the fact that executives are drawn from the actuarial ranks. Nevertheless, in the British field, there are a number of men with the actuarial background who occupy high positions with duties entirely concerned with the casualty and fire lines. These cases are living demonstrations of the value of technical training when combined with general ability.

It should be the aim of this Society to develop men who are competent to rear a structure of sound executive ability upon a secure foundation of actuarial principle.

MR. R. A. WHEELER:

Mr. Hull's paper presents to us in a timely, forceful, concise statement the undisputable need for scientific control in the field of casualty insurance. In fact, the need for such control is greater than in any other field of insurance for in addition to meeting the hazard of insurance *per se*, casualty insurance is also subject to all the hazards incidental to the rapid changes in our economic life into which its coverages are so inextricably interwoven. Although the need for scientific control is generally

recognized in the field of life insurance not only by the companies but also by statute, this cannot be said to be generally true of casualty insurance. In fact, there is a definite resistance upon the part of some casualty insurance companies to actuarial or administrative statistical control over their operations, accompanied with a blind faith that in some mysterious manner profits ensue from the mere writing of the business.

This resistance is due partly to the prevalent feeling that certain overhead expenses are a necessary evil, partly to the skepticism that results would not be those that are claimed, and partly to a misunderstanding as to the nature of the expense now required to maintain a statistical department. I doubt whether it is generally understood that probably 90 per cent. of the expenses of maintaining a statistical department is a direct consequence of legal and statutory requirements. Here is a substantial investment over which the individual company has no control except in the economies of efficient administration. Why should not this investment be capitalized by the additional expenditure necessary to harness the available information for analyzing the companies' various sources of profit and loss, thus permitting a greater degree of scientific control. This additional expenditure for concentration and thought upon statistics already available risks little in comparison with its potential returns.

There are one or two other thoughts which have been prompted by Mr. Hull's paper. Under the head of "operating control" should we not in addition to the various corrections necessary to differentiate between the statutory statement and the internal operating statement introduce a reserve for expenses incurred but not paid, thus placing the company's expenses on an incurred basis in the same manner and for the same reasons that the company's losses are placed on an incurred basis. The distortion during the present business depression between work units and expense allowed out of current premiums to handle these units has no doubt impressed the companies with the fact that much of the current work done today is on business placed on the books one, two, three, five years ago during the period of prosperity. The existence and need for such a reserve for claim expenses is obvious and in fact has been recommended by the Society's reserve committee. I believe that a similar reserve

is required not only for claim expenses but also for underwriting, statistical, and accounting expenses. As a budgeting control, the placing of expenses on an incurred basis has the advantage of putting on the brakes during a period of expansion and of effecting a closer correlation between work units and available expenses during a period of depression. The present system of paid expenses encourages extravagance when attention should be focused on the economies necessary to absorb an expanding volume of business and at the same time forces undeserved economies during the depression which may result in the sacrifice of service.

Further, should we not also give attention to the probable need in the casualty insurance business for a cyclical reserve for losses over and above the present statutory reserve to take care of the inflationary effect of periods of depression upon the outstanding loss of the various casualty lines of insurance? An attempt has been made to recognize this in the fidelity and surety fields, but I believe it should be given recognition in other lines as well.

MR. H. J. GINSBURGH:

It is difficult to take issue with the content of a paper of the type so well prepared by Mr. Hull, or to add to it. We may feel that the practical needs of organization might not give to one individual the hypothetical administrative statistician, all the duties allotted to him in this paper; for example, budget administration and expense control are usually a separate function. But such distinctions are relatively unimportant in the broad view Mr. Hull has taken of the possibilities of statistical analysis as a guide to administration.

The problem of internal operating statements is of prime importance to administrative statisticians, particularly those in companies with a considerable volume of lines in which the true premium income is known only retrospectively, and in which the true loss liability is not determined for long into the future. Mr. Hull has indicated several elements which must be considered in arriving at the actual results of a given period soon after its close. Another factor, not mentioned by him, is the extent of change in loss reserves due solely to under or over estimate of previous years. The degree of distortion given by this factor to the oper-

ating statement for a given period can, however, be greatly minimized by the work of the statistician along another line, namely, the testing of claim reserves. On the premium side it is to be hoped that the Society will have before it more explicit information on the item "estimates of earned premium accruing on policies subject to audit." Good results in this connection have been obtained in the correlation of reported accidents and earned premiums.

Mr. Hull devotes roughly a third of his paper to a discussion of statistical possibilities in the study of acquisition cost and of branch office and agency results. This is unquestionably an important, even vital matter, but some of the items mentioned should be considered in the light of what is later brought out by Mr. Hull, that "it should be the administrative statistician's responsibility to see that the cost of the record does not exceed its value." This responsibility is extremely difficult to carry out, since it is often impossible to determine the value of a record before the statistics are obtained. Nevertheless, it exists, and applies not only to the matter in connection with which it is brought out here, but to all the work of the administrative statistician.

The foregoing emphasis on the consideration of cost should not be inconsistent with the last point to be made in this discussion. It is a point implied in Mr. Hull's paper, and here made more explicit. Casualty companies are compelled to maintain statistical organizations of some nature, and at a definite and appreciable cost, in order to supply the statistical information required by states and bureaus. Compared with this cost, and with the results to be obtained, the additional cost is small by which the companies may make use for themselves, in problems of management, of the organization and material made necessary by external requirements. Mr. Hull has reported an excellent survey of the field.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. ROBERT S. HULL:

The discussions by Messrs. Greene, Wheeler and Ginsburgh are so far in accord with the intent of the original paper as to call for no particular reply from the author. Each of the gentlemen

has made valuable additions to the necessarily broad generalizations of the paper and it only remains for the author to express his thanks to them for their contributions to the subject. The past months have emphasized still further, if that were possible, the need for thorough going analysis of the results of current operations and of the causes that have brought about these results. It is to be hoped that other members of the Society may be moved to contribute the results of their thoughts and experience on the numerous phases of this very vital and timely topic.

THE NEW YORK UNIT STATISTICAL PLAN; A METHOD OF PREPARING AND REPORTING DATA AND ANALYZING THE CARRIER'S BUSINESS—CHARLES M. GRAHAM

VOLUME XVII, PAGE 190

WRITTEN DISCUSSION

MR. W. N. MAGOUN:

Mr. Graham's paper first outlines, in complete detail, the thorough method installed and developed by the State Insurance Fund of New York to meet the requirements of the New York Unit Statistical Plan pertaining to workmen's compensation experience.

It is not possible to read Part II of his analytical discussion without being impressed by the fact that an enormous amount of detail work is involved, and that extraordinary precautions have been taken to secure accuracy in the preparation of material. There are to be found here descriptions of so many steps in the process of originally recording and subsequently verifying the data for submission to the Compensation Insurance Rating Board, that Mr. Graham's paper should prove of value to the employees of any insurance company who have found difficulty in producing absolutely accurate results.

In Part III Mr. Graham points out a secondary value of the Unit Statistical Plan over and above its primary purpose, whereby the labor expended in the carrier's office may be turned to good account, at practically negligible additional cost, through producing facts of value in the conduct of the carrier's business, which facts would not have been available had it not been necessary to prepare the data to serve its primary purpose.

In his concluding paragraph Mr. Graham offers the suggestion that the operation of the Unit Statistical Plan might properly be discussed from the viewpoint of a central rating organization.

The Massachusetts Rating and Inspection Bureau has recently completed the tabulation of Schedule Z for policy year 1929, the first such tabulation undertaken by the Bureau. Like a new automobile, the machinery did not run quite so smoothly for "the first 500 miles." All obstacles were overcome, adjustments and "truing up" accomplished and the Schedule Z placed in the hands of the Commissioner of Insurance at practically the same time as in previous years the Insurance Department had been accustomed to finish its verification and tabulation of the reports submitted individually by the carriers.

The Bureau furnished the Massachusetts Insurance Department with the following:

(1) For each company
    Classification sheets
    Individual case reports

(2) For each classification
    Combined company reports

(3) Summary by companies and grand total
    (Earned premiums shown both with and without loss constants)

In the carrying out of Mr. Graham's suggestion, the same natural division takes place in any comments which may be made by a representative of a central rating organization. Namely, discussion of methods followed to achieve the primary purpose of the Unit Statistical Plan, and the secondary benefits to be derived from further utilization of the data thus secured.

I am not prepared at this time to forecast the various uses which may be made of the Unit Statistical Plan data now available. Rather than discuss future possibilities in advance, I prefer to reserve comments until actual uses have been found and tested, and their value demonstrated.

I believe, however, that the method of "control" in the Bureau's office, to assure accuracy in the completion of Schedule Z from the unit data submitted by the carriers, may be of interest as

a supplement to Part II of Mr. Graham's paper dealing with his methods of securing accuracy in the first instance.

The Bureau receives from each carrier—

(1) Copy of policy declaration
    Cancellation notice
    Reinstatement notice
(2) Individual risk form
    Transmittal letter
    (Each calendar month separately)
(3) Individual case reports

The Bureau receives, through the Industrial Accident Board and the Massachusetts Insurance Department, copies of

(1) Agreement in regard to compensation.
(2) Agreement for redeeming liability by payment of lump sum.
(3) Application for discontinuance of compensation payments.
(4) Employees agreement to discontinuance of compensation.
(5) Abstracts of "findings" by Industrial Accident Board or individual member thereof.

The Bureau prepares in its own office—

(1) Individual risk index card
(2) Company control card
(3) Punch cards
    (a) Risk card (b) Premium card (c) Loss card
(4) Classification control sheet

Individual Risk Index Card

On the individual risk index card details of each policy declaration are listed, with subsequent record of cancellation or reinstatement, if any. The receipt of each individual risk form is also recorded, and failure to file is followed up.

Company Control Card

Each individual risk form received from the insurance company bears a serial number which is of great value for identifica-

tion purposes, especially in keeping the records of shipments received, and in correspondence pertaining thereto.

On receipt of a transmittal letter from the company, with its accompanying individual risk forms, the Bureau records the serial numbers and corresponding items of payroll, premiums and losses, which are totaled to check the totals reported by the company in its transmittal letter.

Such original totals for each shipment are then entered on the company control card—designated as "transmitted amounts".

The Bureau then audits the respective individual risk forms by checking the rates, loss constants, premiums and losses, and by comparing the loss data with the Industrial Accident Board forms and the individual case reports.

Any discrepancies found are immediately taken up with the company, and after adjustment a new set of final totals for each shipment is entered on the company control card—designated "verified amounts".

Each company is advised of the total of the verified amounts, according to each shipment, so that by retaining these individual verified totals, the company at the end of the year, by adding them up, has a record of the accumulated year's experience exactly corresponding to the Bureau's final records.

Punch Cards

The punch cards are prepared from the individual risk forms, after audit by the Bureau, and are sorted and tabulated by company. The total payrolls, premiums and losses derived from the punch cards are compared with the "verified amounts" entered on the company control card, and must agree therewith. (If any variation is found, the cause thereof is investigated and correction made.)

Classification Control Sheet

A classification control sheet, which is cumulative monthly, has been adopted.

The premium and loss cards (after comparison with the "verified amounts" on the company control cards, as above described) are sorted by classification, without regard to companies, and the

total for each classification is entered on the classification control sheet.

The premium and loss cards are then further broken down by companies, within each classification, to provide an individual company classification sheet for Schedule Z.

The totals for each month of all of the individual company verified totals, taken from the company control cards, must agree with the classification control sheet for that month. If any discrepancy is found, it is investigated and rectified.

At the completion of the year the twelve monthly totals for all companies combined, derived from the company control cards, must agree with the accumulated totals on the classification control sheet.

MR. R. A. WHEELER:

Mr. Graham's very thorough and complete description of the actual handling of the New York Unit Statistical Plan within a carrier's office and its potential utility in the analysis of the carrier's business is a valuable contribution. The Unit system has passed through the initial stage of experimentation and may become the generally accepted statistical plan for workmen's compensation insurance. Its weakness, if such it may be called, lies in the probable underestimation of reserves which may result in the close identification between individual risks and manual classification rating. This underestimation of reserves, however, merely directs attention to an inherent defect in the statistical base for the three above-mentioned phases of rate making procedure and presents a problem requiring solution irrespective of whether we operate under the Unit system or under the old Schedule Z system.

There also remains the question whether the individual carrier should continue to duplicate the punching and tabulation work of the central board for its internal uses or whether we shall accept the possible economy of having this work done once by the central board which in turn could supply the individual company with tabulations for its internal use. This is now being done by the Massachusetts Bureau which tabulates the individual carrier's Schedule Z simultaneously with the original Schedule Z and supplies each carrier with a copy of its own Schedule Z.

In this connection Mr. Graham has apparently effected an internal economy by substituting for the various tabulating premium and loss cards of a risk usually employed for Schedule Z a single risk card as the basis of all required internal tabulations. A tabulation of risk experience to governing classification thereby takes the place of the old Schedule Z. So far as the internal uses are concerned, this tabulation to governing classification would appear to be more useful than the more accurate and refined separation accomplished under the old Schedule Z.

With respect to the internal uses of the unit reporting system, we have found that the mere listing of risks by loss ratio groups for various exposure groups has an inspirational value to the underwriting and engineering departments by bringing into panoramic review the year's results obtained by these departments. We are also planning to break down our experience for a given policy year by the year in which the business originally came to the company. This will offer information as to the character of the selection of business in the first instance and thereafter to the improvement under the company's underwriting and engineering supervision during succeeding years.

MR. A. Z. SKELDING:

Mr. Graham states that the two main purposes of his paper are "to outline first, the method adopted by the carrier with which the writer is connected to meet the requirements of the Plan, and second, the additional analysis work carried on to furnish the management of the carrier with statistics designed to facilitate the analysis and control of its business."

As Mr. Graham has adequately covered these objectives in a clear and interesting manner, and in extended detail, his paper will be read with particular interest by those directly engaged, in company offices, with the preparation and filing of compensation experience for those states where the Unit Statistical Plan is already in effect. Although Mr. Graham's paper is confined to the New York plan, any procedure designed to cover the reporting of experience under the New York plan will be equally applicable with, perhaps, some minor modifications, to the reporting of data for those other states which have adopted the Unit plan.

While Mr. Graham's paper should be of primary interest to company men, it must also appeal to those in the central organizations charged with the duty of receiving and compiling the experience of all carriers. An appreciation of the various steps required to accumulate the data in the company offices and of the various checks made by the company to insure accuracy is certainly of considerable value to the people who are engaged in the scrutiny and auditing of the data to eliminate, as far as possible, any residual errors or discrepancies.

That part of Mr. Graham's paper which makes the strongest appeal to the writer is the discussion of the numerous checks and counter-checks made by the company to guarantee that the data as filed are correct as far as is humanly possible. Apparently the procedure outlined suffices.

Off-hand it would appear that, under the procedure described by Mr. Graham, there might be some chance of all losses not being reported, due to the possibility of the actuarial department failing to prepare an employer's card where required. Also, would it not be possible for one of these cards to be mislaid or to go astray while being routed between departments? It is true, that with the system of checks outlined, these possibilities do not appear likely and perhaps the writer has overlooked that part of Mr. Graham's paper which outlines the procedure to guard against this occurrence. In view of the fact that a check up on the experience for the first eight months of operation disclosed that employer's cards had been made out in all cases where required and in view of the many checks at different phases of the procedure, perhaps it was felt that the remote contingency of the failure to make up an employer's card did not justify the expense and labor involved in this final check.

There are two points connected with the data punched on the company's Hollerith card which the writer believes warrant some discussion. Undoubtedly these points were considered when the Hollerith card was designed and there were very good reasons for the procedure adopted.

Instead of merely punching the industry group (i.e., manufacturing, contracting, or all other) as is done in column 44, we might consider the desirability of punching the industry schedule. If the schedule were punched, the cards could be easily

sorted to the manufacturing, contracting or all other groups as at present. If at some future date the industry groupings were changed for instance, by erecting another industry group, then a tabulation could be easily made according to the revised groupings. It does not appear that this would be possible under the present procedure. It is probably true that the posting of the industry schedule instead of the industry group by the coding clerks would be a somewhat slower process at the start, but experience and practice would provide the remedy.

A second point is that under the present method of preparing a risk Hollerith card by governing classification, it does not appear possible to take off experience by manual classification. The procedure adopted, of course, has its advantages. It has been necessary in the past, however, under authorization by the carriers and under certain unavoidable circumstances, for the Compensation Board or the National Council to issue a special call for experience on a particular manual classification.

We do not believe such data could be obtained from the card described by Mr. Graham. It is not always practicable, if the central organization is engaged in tabulating the experiences for all classifications, to break in on this tabulation in order to take off the data for a particular classification. This condition, however, is of such rare occurrence that, by itself, it does not offer sufficient justification for deciding that punching by manual classification is preferable to the procedure adopted.

However, it would also appear that if a rate revision were contemplated each carrier would be interested in its own experience by classification. It is realized that this information, by classification, may be obtained from other sources. Presumably, the central organization could furnish each company with its experience by classification. It does not seem feasible to design a practicable 45-column card which would enable the carrier to tabulate from its own punch cards both classification and risk experience. However, it might be advisable to consider the possibility of making provision on the punch card for determining the results of merit rating.

As previously stated, Mr. Graham's paper is concerned with the actual procedure inaugurated by one carrier for compiling compensation experience under the requirements of the New

York plan. As the writer is not engaged directly in this work, the above remarks must be considered not in the light of suggestions but rather as the remarks of a layman seeking information.

The sustained interest which obtains in a reading of Mr. Graham's paper is due to the conscientiousness and thoroughness with which the paper has been prepared. The writer would welcome a similar discussion on the part of someone connected with a multiple-line casualty company doing business in many states. Such discussion would, perhaps, bring out certain features of the procedure which are perfectly logical and efficient in the case of Mr. Graham's company, but would require modification in the case of a multiple-line nationally writing company.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. CHARLES M. GRAHAM:

Messrs. Magoun, Wheeler and Skelding have made such kind and considerate comments upon my paper, that there are few points for me to discuss. I believe the Society is very much indebted to Mr. Magoun for his outline of the central office procedure of the Massachusetts Rating and Inspection Bureau, which I believe should really be offered as a paper rather than as a review.

In Mr. Wheeler's discussion, he comments on the "probable underestimation of reserves which may result from the close identification between individual risks and manual classificating rating." Realizing that this criticism might apply with considerably more force now that individual risk experience is used for both risk rating and classification rating than when risk data and classification data were filed separately, the writer has prepared some rough figures comparing the Fund's first report of 1928 policy year with the present status of the same data as corrected by the third report for the months of January to May, inclusive, and the second report for the months of June to December, inclusive. The total incurred losses reported to the Rating Board by the State Insurance Fund for the first report were about one-tenth of one percent. in excess of the current figures. A comparison of the first report of the first five months

of 1929 policy year with the second report for the same five months, indicates practically identical figures. The writer recognizes, of course, that these figures are the experience of but one carrier. The system outlined in the paper referred to, has been constructed so that open claims are reviewed before submission to the Rating Board, not only as to the reasonableness of the estimates, but also as to their adequacy.

At the time the State Fund system was set up, the question of depending upon the central rating organization for summary tabulations of the individual carrier's experience, was considered. It was felt that the Fund would be in a better position to make current tabulations of its own experience, than the central rating organization. Also, additional information not required by the Board is recorded on the office copy of the experience card. These data are punched on the Fund's Hollerith cards, and furnish information not otherwise available. This additional detail would be of considerable value to any carrier, and, I believe, justifies the work of preparing Hollerith cards which in addition, serve as a balancing medium for the experience cards before transmittal to the central office.

The Fund is now working on tabulations which will segregate the experience of the various policy years according to the year in which each risk was originally written.

In Mr. Skelding's paper, he points out that there is some chance of an employer's card being missed and the experience report to the Board reflecting no losses on the risk instead of the true loss experience. In making a general check-up of our files, we found that on the entire experience of policy years 1928 and 1929, but two cards were so missed. This was due not to an inherent fault in the system, but to failure to observe office regulations by one employee of the actuarial department. This situation has now been corrected, but it is felt that an error on two cases in over 50,000, hardly indicates a flaw in the general system.

Mr. Skelding also points out how desirable it would be to punch the industry schedule rather than merely the industry group. The writer agrees that this would be desirable, but at the present time, it is not feasible since all forty-five columns of the punch card have been utilized. It is evident that the punch-

ing of the industry schedule would require two columns of the punch card, whereas the industry group code requires but one. We are considering the adoption of an eighty column card for this work and it is quite possible that when such a card is adopted, the industry schedule will be punched in full instead of merely recording the industry group.

At the time that the Fund's punch cards were designed, separate exposure and loss cards were in use for the preparation of Schedule Z. These were discontinued on the theory that for internal purposes, the preparation of experience by governing classification was more significant than experience by manual classification with the possible exception of experience on contracting business covered by Schedules 26 and 27. It was felt further that the tremendous amount of additional work occasioned by punching experience by manual classification was not warranted by the rather nebulous value of such information on a single carrier's business. His suggestion of recording the results of merit rating on the punch card is not feasible at the present time due to the limited capacity of the card, but might well be considered for adoption concurrently with the change to the eighty column card.

The writer feels deeply indebted to his reviewers for their careful criticism of the paper under discussion. This is particularly true of Mr. Skelding's discussion in which he has pointed out at least two items which should be recorded on the carrier's punch card at the earliest possible time and which would be utilized immediately were it not for the limited capacity of the card at present in use.

A SUGGESTED MODIFICATION IN THE POLICY YEAR METHOD OF COMPILING EXPERIENCE DATA FOR THE MAKING OF AUTOMOBILE INSURANCE RATES—JOSEPH LINDER

VOLUME XVII, PAGE 225

WRITTEN DISCUSSION

MR. J. M. CAHILL:

Although it is controversial whether the advantages of the plan advocated by Mr. Linder for compiling automobile statistics on an accident year basis would outweigh the disadvantages result-

ing from such a plan, it is not the writer's intention to go into this phase of the subject but rather to confine himself to a discussion of the statistical difficulties and additional expense which would result if this plan were introduced. Mr. Linder's paper does not go into detail regarding this angle of the subject, but instead is largely concerned with outlining the plan itself and the advantages which would be derived from a rate making standpoint. The plan advocated by Mr. Linder is by no means new. It was used by one large company in recording its automobile experience of policy years 1926 and 1927, but was discarded because of its imperfections and greater cost. The comments which will be given in this discussion of the statistical problems connected with the operation of the proposed plan are based, therefore, on actual experience to some extent and are not entirely of a theoretical nature.

The adoption of the accident year method of compiling automobile statistics would introduce but little additional work in the compilation of the statistics relating to losses, inasmuch as the date of accident is punched on the loss cards at the present time. It should be mentioned, however, that the loss cards constitute only a relatively small proportion of the total number of loss and exposure cards punched.

Considerable additional work and a greater possibility of error would result in applying the proposed plan to the recording of the exposure items. Under the present statistical system the exposure is punched in terms of tenths of a car year. Under the proposed plan it would first be necessary to split the exposure by months in each of the two calendar years and then to punch these two items in separate fields. The added amount of work would vary somewhat with the nature of the exposure item, depending on whether it was an original writing, a suspension, a change, or a cancellation.

In order to assure accuracy in the splitting of the exposure on original writings, it would be necessary to have clerks insert on the cards or other records from which the statistical information is punched, the proper split in months between the two calendar years before the cards are turned over to the punching operators. This coding would also be essential in order not to slow up the punching.

It is a common practice not to record suspensions until an endorsement showing the reinstatement date and the return premium for each suspension is received in the statistical department. At the present time it is necessary to calculate from this information only the period of lay-up expressed in tenths of a year. Under the proposed system, it would also be necessary to convert the lay-up from tenths of a year to number of months and, in addition, to indicate the number of months of minus exposure in each calendar year. In view of the large number of suspensions, it is obvious that this would entail much more work and much greater possibility of error than the present method.

On changes and cancellations, the effective dates would be known and it is probable, therefore, that there would not be much more difficulty in properly recording the exposure than is encountered at the present time. The added work would result again from the necessity of determining a split of the exposure between the two calendar years.

An important point to be kept in mind from the statistical standpoint is that it is not the practice at the present time to verify the punching of all cards, but merely to employ sample verifying to determine whether the punching errors of the individual operators are less than the number which is considered to be inevitable. The complications introduced by the split policy year method would undoubtedly increase the number of errors and it would probably be necessary to increase the amount of sample verifying done in order to check the work of each operator more frequently.

It has been assumed in this discussion that only the exposure would be split between the two calendar years and that the premium for the entire policy year would be recorded as one item. To accomplish the split of the policy year exposure to its two component accident years, the necessary information could be punched on two cards, of course. The objection is the doubled expense, since twice as many cards would be used, considerably more actual punching would be required, and there would be twice as much tabulating. It is evident that if the proposed plan were to be made at all practicable, it would be necessary to record the split exposure items on one punch card. The use of one card would mean that there would be no increase in the

number of cards used or in the tabulating, provided all of the necessary fields could be added at once.

Exhibit 1 shows the punch card which was used by the company mentioned previously in recording its exposure in policy years 1926 and 1927. It will be noted that this card has separate fields for writings and cancellations. The premium items were recorded in total, but the exposure was split into the number of months in the first and second calendar years composing the policy year. As stated previously, this card was discarded because of the additional work and expense incurred by its use.

Exhibit 2 shows the punch card which is now being used by this company in compiling its automobile exposure on a complete policy year basis. It will be noted that this same card is used for automobile fire, theft, glass, tornado and collision, in addition to automobile liability and property damage. Column 28 is used to indicate whether the item is a writing or a cancellation.

The punch card shown as Exhibit 2 could be modified slightly so as to be satisfactory for the recording of the necessary information on a split policy year basis of compiling experience. The changes which would be necessary in the fields for recording the premium and exposure are shown in Exhibit 3. It would be possible to secure the additional two columns for these fields by making certain minor changes in the statistical coding plan now being used by this company.

Large numbers of cards are punched by each company in recording the automobile exposure of each policy year. It is an expensive matter to sort and tabulate these cards. In view of the large number of cards involved, it is essential from an expense standpoint to avoid, if possible, running the same punch cards through the tabulating machines twice for the compilation of experience statistics. It will be seen from Exhibit 3 that if the automobile liability and property damage exposure items are recorded on the same punch card, it will be necessary to tabulate six fields at once. Three of the fields would furnish the exposure in months in each of the two calendar years and the total premium for public liability coverage, and the other three fields would furnish similar information for property damage. Since the Hollerith machines used in most companies have only five banks for designating or adding, it would be necessary either to

run the cards through the machines twice or to employ split banks for tabulating the exposure items. If the latter method were followed, one bank would undoubtedly be used for designating purposes and two banks would be used for tabulating the public liability and property damage premium fields. A fourth bank would be split in order to wire in the exposure of the two calendar years under public liability, and the last bank would be split in order to tabulate similar data for property damage.

This procedure would have its disadvantages, since there would only be available, on the machines, places for four digit totals for each of the calendar year exposure fields. In the case of territories which develop a large volume of business, there would be grave danger of the totals in the split banks amounting to more than the figure which the tabulating machines could indicate. This danger could be eliminated, of course, by placing a limit on the number of cards to be tabulated at one time. The objection to this restriction is that the placing of such limitations on the tabulating process serves to slow up the rate at which the cards are handled and also introduces additional work in compiling the tabulated results.

If seven bank machines were installed generally, the tabulating difficulties under the proposed plan would be relieved somewhat. Since five of the banks on these machines can be used for adding, it would be necessary to employ a split bank only for tabulating the property damage calendar year exposures. The public liability exposure for the two calendar years could be tabulated in separate banks. This data would serve as a close check on the split of the property damage exposure and any serious error in the latter could be readily detected. The rental cost of seven bank machines is higher than that for five bank machines, however, and it seems probable that most companies woud not want to incur this additional expense in view of the fact that five bank machines are satisfactory for most of their tabulating needs.

In addition to the difficulties introduced in the punching and tabulating, there would be considerably more work involved in summarizing and checking the tabulated results under the proposed plan. It is very important to check the indicated average rate for each division of the experience against the manual rate, since many errors are not discovered prior to this point because,

as stated previously, only a small percentage of the actual punching is verified. To perform this check, it would first be necessary to add together the months of exposure for the two calendar years composing the policy year. It would then be necessary to convert the total number of months of exposure in the policy year to written car years before calculating the average rate. Instead of being a simple calculation as at present, under the proposed plan this check would be quite complicated.

It is obvious from the foregoing discussion that considerable work would be added to the statistical departments of the various companies if the proposed plan were introduced. The amount of work now performed by the Bureau in compiling the results of all companies would be exactly doubled if this system were introduced. The companies now have great difficulty in filing their reports on time. It is six to ten months after the year-end before the reports are filed with the Bureau and it is late fall before these reports can be compiled for review. If revised rates are to be made effective, it is desirable that they be promulgated before the end of the year in order that the renewals of the following year will be written at the revised rates. It seems probable that the proposed plan would slow up the compilation of the required statistics both in the individual companies and in the Bureau to such an extent that the revised rates could not possibly be determined in time to be available for application on the renewal policies written to become effective in the early part of the following year. This would mean that, in effect, a considerable portion of a year would be lost in the application of the revised rates and whatever benefits might result from the use of accident year data would be more than offset by the further lag introduced between the period covered by the experience and the period during which the rates would be effective.

It is the writer's opinion that the present period of unfavorable business conditions is no time in which to experiment. Several years would elapse before sufficient experience on the proposed basis would be available and there is some doubt as to whether this experience would be of greater value than the experience compiled on the present basis. It is not amiss to point out that for calendar year 1930, in spite of an increase in the earned premium for both automobile public liability and property damage,

the administration expense ratio of all companies for each of these lines according to the Casualty Experience Exhibit increased to a figure substantially in excess of the provision in manual rates. The casualty companies are suffering severe underwriting and investment losses during the present period of depression and it would be inadvisable for the companies to introduce any changes in their statistical procedure which would increase their expenses at this time without the definite promise of benefits which would justify the increased expenditure. Whether Mr. Linder's proposal meets this criterion is problematical.

EXHIBIT 1

POL. YR.	KIND OF COV.	POLICY NUMBER	CLASS	LIMITS P.L.	TONNAGE	LOCATION		WRITINGS						CANCELLATIONS					
								LIABILITY			PROPERTY DAMAGE			LIABILITY			PROPERTY DAMAGE		
						STATE	CITY	PREM. DOLLARS	CAL. YR. EXPOS. IN MONTHS 1ST	2ND	PREM. DOLLARS	CAL. YR. EXPOS. IN MONTHS 1ST	2ND	PREM. DOLLARS	CAL. YR. EXPOS. IN MONTHS 1ST	2ND	PREM. DOLLARS	CAL. YR. EXPOS. IN MONTHS 1ST	2ND
0	0	0 0 0 0	0 0 0	0	0	0 0	0 0	0 0 0	0 0	0 0	0 0 0	0 0	0 0	0 0 0	0 0	0 0	0 0	0 0	0 0
1	1	1 1 1 1	1 1 1	1	1	1 1	1 1	1 1 1	1 1	1 1	1 1 1	1 1	1 1	1 1 1	1 1	1 1	1 1	1 1	1 1
2	50 DED P.D.	2 2 2 2	2 2 2	2	2	2 2	2 2	2 2 2	2 2	2 2	2 2 2	2 2	2 2	2 2 2	2 2	2 2	2 2	2 2	2 2
3	3	3 3 3 3	3 3 3	3	3	3 3	3 3	3 3 3	3 3	3 3	3 3 3	3 3	3 3	3 3 3	3 3	3 3	3 3	3 3	3 3

EXHIBIT 2

EXPOSURE	CAL.	DATE OF ISSUE	POLICY NUMBER	BRANCH	LOCATION	COV.	LIMITS	*CLASS	TONNAGE	MERIT-INST	W.C.	LIAB., FIRE, GLASS, TORNADO, COLLISION			PROPERTY DAMAGE, THEFT			OPERATOR
												PREMIUMS		CAR YRS. AMT. OF INS IN/10	PREMIUMS		CAR YRS. AMT. OF INS IN/10	
	MO.	YR. MO. YR.			STATE CITY		P.L. P.D. O.L.P.D. OR C. AGE					DOLLARS	CENTS		DOLLARS	CENTS		
0	0	0 0 0 0	0 0 0 0	0 0 0	0 0 0 0	0 0	0 0	0 0 0	0	0	0	0 0 0	0 0	0 0 0	0 0 0	0 0	0 0 0	0
1	1	1 1 1 1	1 1 1 1	1 1 1	1 1 1 1	1 1	1 1	1 1 1	1	1	+	1 1 1	1 1	1 1 1	1 1 1	1 1	1 1 1	1
2	2	2 2 2 2	2 2 2 2	2 2 2	2 2 2 2	2 2	2 2	2 2 2	2	2	−	2 2 2	2 2	2 2 2	2 2 2	2 2	2 2 2	2
3	3	3 3 3 3	3 3 3 3	3 3 3	3 3 3 3	3 3	3 3	3 3 3	3	3	3	3 3 3	3 3	3 3 3	3 3 3	3 3	3 3 3	3

EXHIBIT 3

		LIAB., FIRE., GLASS, TORNADO, COLLISION				PROPERTY DAMAGE, THEFT			
		PREMIUMS		CAL. YR. EXPOS. AMT. OF INS.		PREMIUMS		CAL. YR. EXPOS. AMT. OF INS.	
W.C.		DOLLARS	CENTS	1 ST.	2 ND.	DOLLARS	CENTS	1 ST.	2 ND.
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0 0 0	0 0	0 0	0 0	0 0 0	0 0	0 0	0 0
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	+	1 1 1	1 1	1 1	1 1	1 1 1	1 1	1 1	1 1
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-	2 2 2	2 2	2 2	2 2	2 2 2	2 2	2 2	2 2
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3	3 3 3	3 3	3 3	3 3	3 3 3	3 3	3 3	3 3

MR. CARL H. FREDRICKSON:

Mr. Linder's paper is very timely and deals with a matter which gives every casualty executive and rate maker great concern at the present moment—that of fixing rate levels. The deficiency of the present method is that conclusions regarding future rate levels are, to a certain extent, based on an estimate of the past rather than known facts.

The substitution of estimates for facts arises from the inclusion of the last policy year experience valued as of 12 months. The reason why this experience must remain on an estimate basis is that outstanding losses comprise such a large proportion of losses incurred (see Appendix "A"), and the uncertainty of the development factors. It may, of course, be argued that the uncertainties arising from these two factors are not greater than the uncertainties of what the future may bring. Still the period of uncertainty is already past history when the new rates come into effect. And furthermore, I suppose that nobody would argue for the substitution of estimates for facts if the latter were available.

The question is how to get these facts. Mr. Linder proposes a solution by the substitution of accident year for the incomplete policy year. Insofar as I am able to determine the properties for the new method, it eliminates to a certain extent the deficiencies of the incomplete policy year and is undoubtedly a superior method. It does away with the development factors and reduces the proportion of outstanding losses to incurred losses. But it does not bring the experience period closer to the effective date of the new rates based on this experience. Consequently, although the estimates of the past are somewhat reduced to facts, it does not attempt to bridge the gap of uncertainty represented by the 12 months elapsing between the experience period and the new rates. If it were possible to speed up the compilation of experience under the new method, this objection would be overcome. But there is really nothing in the new method to indicate that this could be done. On the contrary, it involves additional work as compared with the present method.

The losses outstanding at the end of the year, which are taken into account as outstanding on the accident year basis, would eventually be paid and the exact amount of the losses would be

known. It is, therefore, suggested that the experience would have to be re-run as of 24 months and 36 months. On the basis of a comparison of the losses estimated and the losses ultimately paid it *may* be possible to establish either one of two alternatives, namely, (a) a better loss estimate procedure by companies negligent in this regard, or (b) a correction factor for under or over estimates in losses outstanding.

The proposition involves, first, compilation of the exposure and the loss experience for the last accident year, and secondly, correction of the exposure and loss experience of the second and the loss experience of the third previous accident years.

The normal time for compiling automobile experience seems to be some time in April or May. Suppose that the experience were available to the Bureau as of May 1st. It would take about a month, at least, for the Bureau to combine and work up the experience into rate indications, and another month for the Bureau to decide on the rates and confer with state officials sufficiently to get permission to either decrease or increase rates. This takes us down to July 1st approximately. Any time is better than no time to put into effect something that should be, and has not been, but July 1st strikes me as being an unusually unfortunate time for a rate change. The confusion in agents' offices, the possible taking advantage of the rate situation on either side of July 1st on account of the large amount of business going through at this time, the confusion in companies' underwriting and statistical departments, and finally the undesirability of splitting up the year into two separate rate levels, are all considerations which must be given serious thought.

Provided the experience period could be changed to July 1st-June 30th the above objections would be met. The determining point, then, is only whether the compilation of the experience could be accomplished and new rates calculated in time for the following year.

I would suggest that, before any change in method is proposed, study should be given to the possibilities of taking off the incomplete policy year experience as of eighteen months instead of the present twelve months. This involves a comparatively small amount of extra work, as it is chiefly losses and cancellations for a six months' period that are affected.

In Canada we have been trying to at least partially remedy the existing unsatisfactory conditions by taking off the experience of the last policy year on an 18 months basis or as of June 30th. The advantages of this system are that it practically brings us down to 6 months between the new rates and the close of the experience period, that the proportion of outstanding losses to incurred losses is even less than on an accident year basis, that the experience for the incomplete policy year is approximately 92 per cent. complete at this time, that, of all the losses occurring normally during the first six months of the year, about 70 per cent. are taken into account, and that the rates can be made effective as of January 1st of the following year.

The reason we take off an 18 months' experience of the last incomplete policy year instead of making the experience period June 30th to June 30th is twofold. First, we would still have the large proportion of outstandings, and, secondly, so much of our business, 65 per cent., is written before July 1st that the experience would be only about 42 per cent. complete as of June 30th. I do not know exactly how the distribution of writings during the year is in the United States, but I would presume that the business is written more uniformly all through the year than in Canada where the cold winters are neither conducive for car buying nor for driving an automobile. The graphical method in Appendix "B" will illustrate the above points.

One matter that should be mentioned in this connection is that in order to enable us to compile the experience as of 18 months we have found that the only practical method is to collect the experience by way of duplicate punch cards. The method is such that the companies generally punch two sets of cards on an electro key punch at the same time, and one of these sets is transmitted to the Association monthly, while the companies use the other for their own requirements. Tariff and non tariff companies file their experience jointly with the Association under Section 69(a) of the Ontario Insurance Act, which compels adherence to one uniform statistical plan.

However, as statistical methods are more developed in the United States than in Canada, I would say that the Canadian method of collating experience is not necessary for a successful compilation of 18 months' experience in the United States. I think the effort would be worth while trying anyway.

One method, however, which I am in agreement with Mr. Linder would not be worth while trying, is to reduce the incomplete policy year to an earned basis by tabulating the earned fractions of the policy year. I believe that this method is not in any way more accurate, nor would it give any better results, than the present method. It does not reduce any of the present uncertainties and it develops a new one in the form of whether the distribution of the loss experience is in the same ratio as the earned exposure.

APPENDIX "A"

PERCENTAGE OF OUTSTANDING LOSSES TO INCURRED LOSSES
DOMINION OF CANADA

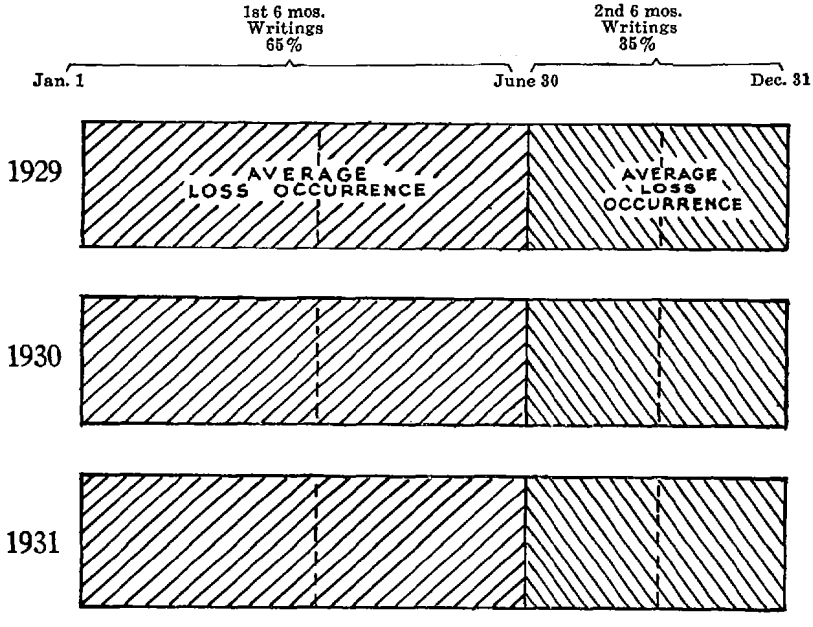
Private Passenger Coverage	1929 POLICY YEAR			Estimated for Accident Year
	12 Months Exposure	18 Months Exposure	24 Months Exposure	
Public Liability....	55.1	29.8	17.5	36.3
Property Damage..	37.2	16.7	7.1	44.3
Collision.....	23.0	8.3	3.0	26.0
Fire	24.3	7.6	1.7	26.0
Theft	26.4	8.8	2.8	29.2

APPENDIX "B"

CALCULATION OF COMPLETENESS OF POLICY YEAR EXPERIENCE

From an analysis of the statistical data it has been found that 62% of the gross premiums or 65% of the net premiums are written during the first six months of the year. This was ascertained on the 1930 calendar year transactions.

The grouping of the premium, therefore, will be in accordance with the following graph illustration:



COMPLETENESS OF EXPERIENCE AT JUNE 30TH, 1930, OF POLICY YEAR JULY 1ST, 1929 TO JUNE 30TH, 1930.

This and also the following calculations are based on the assumption that the losses occur evenly during the experience period. This assumption is verified by an analysis of the losses paid during various months of the year which show an approximately even distribution.

(1) Period	(2) Loss experience as developed up to June 30, 1930	(3) Per Cent. of Total Experience	(4) Per cent. development on 100% volume or on one year writings (2) x (3)
1929 last 6 mos.	¼ during 1929—½ during 1930	35	¾ x 35 = 26.25
1930 first 6 mos.	¼ during 1930	65	¼ x 65 = 16.25
			Total 42.50

COMPLETENESS OF EXPERIENCE AT DECEMBER 31ST, 1930, OF POLICY YEAR 1930 (JANUARY 1ST, 1930—DECEMBER 31ST, 1930)

(1) Period	(2) Loss experience as developed up to June 30, 1930	(3) Per Cent. of Total Experience	(4) Per cent. development on 100% volume or on one year writings (2) x (3)
1930 first six mos.	¼ during first 6 *mos.*		
	— ½ during last 6 mos.	65	¾ x 65 = 48.75
1930 last 6 mos.	¼ during last 6 mos.	35	¼ x 35 = 8.75
			Total 57.50

COMPLETENESS OF EXPERIENCE AT JUNE 30TH, 1931, OF POLICY YEAR 1930 (JANUARY 1ST, 1930—DECEMBER 31ST, 1930)

(1) Period	(2) Loss experience as developed up to June 30, 1930	(3) Per Cent. of Total Experience	(4) Per cent. development on 100% volume or on one year writings (2) x (3)
1930 first 6 mos.	¼ during first 6 mos. 1930		
	— ½ during last 6 mos. 1930		
	— ¼ during first 6 *mos.* 1931	65	1 x 65 = 65.00
1930 last 6 mos.	¼ during last 6 mos. 1930		¾ x 35 = 26.25
	— ½ during first 6 mos. 1931	35	
			Total 91.25

CALCULATION OF PROPORTION OF LOSSES DURING FIRST SIX MONTHS OF 1931 BELONGING TO 1930 AND 1931 POLICY YEARS

(1) Period	(2) Loss experience as developed up to June 30, 1930	(3) Per Cent. of Total Experience	(4) Per cent. development on 100% volume or on one year writings (2) x (3)
1930 first 6 mos.	¼ during first 6 mos. 1931	65	¼ x 65 = 16.25
1930 last 6 mos.	½ during first 6 mos. 1931	35	½ x 35 = 17.50 33.75
1931 first 6 *mos.*	¼ during first 6 *mos.* 1931	65	¼ x 65 16.25
			Total 50.00

In other words, of the losses occurring during the first six months of 1931 — $\frac{33.75}{50}$ or 67.5% have occurred on 1930 policy year business and $\frac{16.25}{50}$ or 32.5% on 1931 policy year business.

MR. THOMAS O. CARLSON:

Mr. Linder's paper presenting an exposition of this modification in the policy year method of compiling automobile experience is a very welcome one at this time. This is one of those proposals relating to the casualty actuarial field which have been discussed widely for years, are comparatively well known and yet have not been presented to the Society in a paper probably because they have not as yet received any widespread trial. It

is desirable that such proposals be submitted to the Society to widen acquaintance with them; out of the broader discussion may well arise valuable practical suggestions.

This proposal is one which comes up perennially for discussion among those engaged in the making of automobile rates. The author of the paper did not affix a name to it: but since it involves the splitting of exposures, and possibly premiums, compiled by policy years into the two component calendar years, and the allocation of policy year losses to the component calendar years of occurrence though at the same time keeping them distinct by policy years, the plan has been designated as the compilation of experience by "policy-calendar" year, and as such I shall refer to it in my discussion.

The advantages of the proposed method as stated by Mr. Linder are twofold: first, there is the accurate measure of earned exposure to increase the accuracy of the determination of relativity between divisions of experience; second, there is the more accurate definition of the loss trend for determination of the rate level.

I am inclined to believe the latter the more important of the two, since under the policy year method, the effect of a trend in a particular twelve-month period is diminished because the experience is halved between two policy years. Reporting of losses by accident year would eliminate this present understatement of trend. Yet, in the long run, the effect would be the same under both plans; the difference would stand out in individual years but not over a period of years. There is an increasing tendency, however, in the automobile lines to pitch the rate level at or near the level of the most recent year, that is the year with a twelve-month development. The criticism of this year for rate level purposes, as Mr. Linder points out, is directed at the inaccuracy of the statement of losses, which are on the average developed only six months. The inclusion of two-thirds again as many immature claims (the claims in the second twelve months of a policy year average in number roughly 40 per cent. of the total) would not increase the accuracy of this experience noticeably. So that despite the advantages the proposed method presents for definition of loss level trend in the earlier years, it is of little aid in determining the loss level of the year in which we are most interested for rate level purposes.

So far as the experience of this latest year is concerned, the advantage is more tangible when we consider the earned factor. The present earned factor is based upon a comparison of written pure premiums of previous policy years developed twelve months and twenty-four months, and is therefore a composite of several factors: a factor to convert the experience to an earned basis, a factor to take care of underestimate or overestimate of loss reserves, and a factor to take care of incurred but not reported losses; these factors of course cannot be segregated each from each under the policy year compilation of experience.

The two loss development components need not concern us particularly, since under any system of compilation a company should be able to establish adequate reserves both for reported and incurred but not reported losses from their experience developments of preceding years, but there is a wide margin for debate as to the extent the determination of the earned factor is actually affected by them.

The chief differences and fluctuations observed in earned factors are apparently caused by the varying distribution of exposures by month. A marked deviation, for example, is caused by the introduction of a financial responsibility law in a state, and this must be anticipated by the rate maker in the first year. The factor approximates a value of 50 per cent. in those states where cars are used the year round, while in states where severe climate curtails the use of cars in winter, the factor moves about 50 per cent.; these differences, however, are reflected in the present procedure by the use of different factors for individual states, or for groups of contiguous states where the exposures are limited.

The chief criticism of the earned factor in the past, and also as emphasized by Mr. Linder, has been founded in the deviations from the average of the smaller statistical territories. The factor is very sensitive, a difference of one point producing about 2 per cent. difference in the pure premium, and this constitutes further ground for criticism. The differences between small contiguous territories, however, are primarily due to incorrect estimates of losses or to thinness of exposure, and the indications of the experience would hardly be much more reliable under the proposed method of compilation. To illustrate, let us consider a city in which claim conditions are notoriously bad; a claim man will

tend to put a high valuation on every claim outstanding in such a city; some of these claims will be settled by compromise, and thus the pure premiums at twenty-four months and thirty-six months will be lower than that at twelve months. A pure earned factor would not aid in this situation.

We see, then, that as regards the accurate determination both of relativity between statistical territories and of the indicated rate level, the "policy-calendar" year compilation comes far from solving all our difficulties though in its further refinement of the experience it presents some advantages over the policy year method; it is not as broadly efficacious as might at first sight appear. There are, moreover, certain practical considerations, which cannot be wholly neglected: they include the increased cost of the complete "policy-calendar" year compilation, a cost variously estimated at from 60 per cent. to 100 per cent. greater than the present; the increased opportunity for errors with every further refinement of the statistics, particularly in the splitting of the exposure; and the greater delays necessitated in the compilation of the experience on this large line of business in which promptness of compilation means so much to the companies.

There have been suggestions made from time to time which might partially secure the advantages of having statistics on the "policy-calendar" year basis. One of these is that the company keep a record of exposures or of premiums by month for each state as a whole for the incomplete year, from which record the pure earned factor for each state could be calculated; this would avoid the necessity of splitting each exposure and save considerable labor particularly in the case of the fleet risks written on a "specified car" basis. Such a plan would substitute a statistical for a derived determination of the earned factor and provide an accurate exposure factor for the broader divisions of experience. Another suggestion is that losses be compiled split by accident year, a simple task compared with the complete compilation under the "policy-calendar" year method; the losses could be related to an earned exposure by accident year derived from the policy year compilation, either for the smaller or just for the larger divisions of experience. This latter suggestion is of more doubtful value than the former. There are certainly more suggestions to be stimulated by a consideration of this proposed

method of compilation, and it is possible that some partial application or substitution designed to accomplish either one or both of its two main objects would repay trial more fully than the use of the plan as presented.

MR. HAROLD S. SPENCER:

Mr. Linder does not suggest that this modification is an entirely original thought, for he writes that "an adaptation of the boiler and machinery 'object months exposed' could be utilized so as to furnish the exposure for each accident year". The casualty companies writing boiler and machinery lines are familiar with this method and the suggestion that this be adapted to automobile liability, property damage and collision, three important lines with many casualty companies, naturally creates a certain kind of interest.

At almost any time and certainly during the present period, any suggestion of a major change in experience methods must be subject to challenge. Two important questions are sure to be asked:—"How much additional labor, equipment and expense will be involved in making such a change? Will the value of the results be commensurate with the time and money expended?"

In Mr. Linder's paper he has emphasized that "Instead of recording a single exposure (on the punch card or other medium) as at present, two exposures representing the accident year in which the policy was written and the succeeding accident year, would be recorded (on the *same* punch card or other medium)". It seems probable that the author was considering the possibilities of the eighty-column punch card in making this statement, for it is seemingly impossible for many companies to insert this additional information on the same forty-five column punch card which is still being used by them.

In one large company there is approximately one and one-quarter million premium entries annually on these automobile lines which require punching, filing, sorting and tabulating. Assuming that a new punch card could be prepared for the purpose of showing the object months exposed, the Hollerith exposure analysis work would be doubled and in the same proportion additional filing equipment would have to be procured.

The preparation of the statistical data is no inconsiderable item. Mr. Linder writes that "with more than 75 per cent. of the experience recorded in car-year units, this split could usually be determined by inspection". It is admittedly a comparatively simple matter to make a split of the object months exposed on applications which are written to cover one or two cars for a period of twelve months. A certain amount of confusion arises on policies which are dated in the middle of the month or for short terms. We may also visualize difficulties arising in connection with suspensions, changes and cancellations. Fleet risks and policies which frequently add new automobiles and cancel other cars, bring added difficulties. Mr. Linder does not clearly state whether his suggested plan is limited to private passenger cars or whether it includes commercial, public, dealers and miscellaneous coverage as well.

If his suggested modification is all inclusive, we may foresee added difficulties. Such policies as are based upon payroll, cost of hire, livery earnings and mileage would necessitate not only a division of the original exposure but a split in the audited figures as well. This contemplated modification, therefore, would not only affect the work of the clerks preparing the original statistical data but also the work in those departments engaged in preparing records of changes, suspensions, cancellations and audits.

Let us consider one or two matters in regard to experience compilation and filing, assuming for the moment that the plan has been put into operation, the clerks in the different departments have determined the various splits which are being recorded on the exposure records, a new Hollerith card has been prepared and is being used, additional Hollerith equipment has been furnished to house and handle the analyses and the statistical department is ready to assume the additional work.

The Hollerith department in due season forwards two sets of experience analyses to the statistical department. One analysis is identical with that of former years and provides the usual policy year figures; the second is a supplementary analysis of exposure by object months. The totals of exposures in both analyses should agree. In the posting process of the regular experience, the usual errors are detected and corrected, but now

care must be taken to see that corrections are made on both sets of experience for eventually two analyses must be combined satisfactorily into one experience.

Additional labor does not expedite reporting and it seems probable that the suggested modification would materially delay the filing of the automobile experience.

Mr. Linder admits that the proposed method would not remedy inaccuracies of loss valuation and therefore the loss figures need not be considered in this discussion. He stresses that "the proposed method—furnishes a more accurate measure of exposure for divisions of premium" and it is probable that this might be admitted. But even the most optimistic would probably admit that the experience at the end of the accident year would not be ideal. An examination of journal entries during the first half of any calendar year will disclose a very large number of items which are assignable to the previous accident year and occasionally to the accident year of two years ago. These items theoretically should have been included in the accident year's experience analysis but cancellations and changes cannot be immediately recorded and naturally it requires several months for audited figures to be recorded on the books.

If, then, we are willing to admit that the exposures would be more accurate than at present, there is still a pertinent question as to whether the results would be worth the amount of time, labor and expense involved.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. JOSEPH LINDER:

I am very much gratified at the discussion elicited by my recent paper. Occasionally a paper justifies itself by the criticism it evokes. My paper probably (and properly!) belongs in this category, since I was not aware that the proposed plan had actually been tried out and discarded, as Mr. Cahill informs us. One of my aims in writing the paper was to stimulate discussion and to that extent I feel amply repaid.

Mr. Cahill's discussion is a thorough and competent presentation of the mechanical problems raised by the proposed plan. I am sorry that Mr. Cahill did not present some data giving a comparison of expenses and losses entering into the calculation of

pure premiums under the present and proposed methods. It would seem that sufficient data is already available to assist in determining whether a change in procedure "would justify the increased expenditure." Also, Mr. Cahill's statement that "the amount of work now performed by the Bureau in compiling the results of all companies would be exactly doubled if this system were introduced" is open to question.

Mr. Frederickson makes the suggestion that the incomplete policy year be utilized as of 18 months instead of as of 12 months as at present. As with his suggestion that the policy year run from July 1 to June 30 instead of from January 1 to December 31, Mr. Frederickson notes that probably the only satisfactory method would be by means of a duplicate set of punch cards. This would add a considerable burden onto the central Bureau and would probably not afford the carriers any relief, since the individual company tabulations would in most instances still be desired. The proposal to utilize the incomplete year as of 18 months raises the question of the influence of seasonal variation in both accident frequency and accident severity.

Mr. Carlson, in the latter part of his discussion, gives consideration to a partial adoption of the plan. It would be very interesting to see an exhibit of the results obtained under various methods.

Most actuaries will probably agree that the present policy year method is not entirely satisfactory and can be improved upon. Whether such improvement can be accomplished at a reasonable expense is still an open question.

THE PLACE OF CONSERVATION IN INSURANCE—ALBERT W. WHITNEY

VOLUME XVII, PAGE 231

(WRITTEN DISCUSSION)

MR. WILLIAM BREIBY:

Mr. Whitney in his interesting paper presents a general survey of the underlying reasons for insurance carriers engaging in activities intended to prevent or postpone the happening of the eventuality insured against, and of the logical development of

those activities. He points out that there is necessarily a time-lag between an effected saving in loss before that saving is reflected in a reduced premium charge to the insured; that the carrier profits by the success of those activities only until the saving is absorbed by reductions in the premium charges, that eventually a static condition will develop, when the cost of the activities equal the savings effected and when the cost will have been gradually transferred to the insured, unless interfered with by unwise laws or state action. Mr. Whitney concludes with an implied plea for all the lines of insurance carriers to extend their conservation, or prevention, activities, striking the humanitarian note in conclusion.

In order to make his treatment of the subject fully comprehensive, Mr. Whitney includes life insurance. My discussion shall be more particularly in the way of emphasis of the difference between the logical attitude of the life insurance companies and of all other kinds of insurance companies toward conservation or prevention activities. However, there are one or two other points which I think it well to refer to and possibly indicate a viewpoint different from that of Mr. Whitney.

I do not think the facts justify us in saying that "the saving of life has entered into the consciousness of life insurance underwriters as part of their job," nor that "conservation (as an activity of life insurance companies) has come to play any important part in life insurance." Not that the individuals conducting the life insurance companies do not have the personal consciousness of humanitarian and economic responsibility corresponding with that of the managers of other insurance lines, or of other thinking public-spirited persons, to aid in preventing loss of life and in improving the general health of the people, but that the opportunities and reasons for such activities are not as patent.

With the exception of the Metropolitan Life Insurance Company, and more recently the John Hancock Mutual Life, little, if anything, is done by the life insurance companies in the way of systematic life or health conservation. The activities of these two large industrial life insurance companies are mainly in connection with the industrial policyholders, whose numbers are of course stupendous. These activities consist of free nursing service, cooperation with local health bodies, and distribution of

literature calculated to educate the policyholders in better and more hygienic living. The radio broadcasting of morning "setting up" exercises by the Metropolitan is also of course directed towards conservation of health.

Several of the companies offer some facilities for periodic physical or medical examination of its ordinary policyholders, but few if any of them now conduct any vigorous campaign for the purpose. In fact, the activities of most companies in this respect are less than they were a few years ago. Recently some few companies have deemed it expedient in isolated cases of claims under the—now much discredited—total and permanent disability benefit provisions, to defray the expense of medical, surgical or sanatorium treatment, in hopes of being relieved of continuing disability annuity payments indefinitely. By such aid a life company might also postpone the payment of the death claim, because, as a rule, the life policy continues without payment of premium during the period of disablement. This, however, has not become a general practice and probably will not, now that many companies are either withdrawing from, or curtailing, the disability annuity—or pension—coverage.

Though, no doubt, the Metropolitan with so large a proportion of the population of the country as its policyholders, largely of the class which would not otherwise acquaint itself with the best modes of living nor have the means of providing desirable nursing attention, and realizing that through its extensive agency system it has an *entrée* which no other organization enjoys, even that of the government, feels a certain social responsibility for the welfare of that vast army. Nevertheless, much of that activity is a most potent advertising medium, even if that be not the compelling motive or incentive. The managers of other life companies, with ideals as high and with a sense of public responsibility as deep as those of the managers of the Metropolitan, hold the conviction that it is not the function of their companies to conduct such activities.

That these activities of the Metropolitan have had the effect of prolonging life, especially at infancy, and of extending the average lifetime of its industrial policyholders as well as that of other groups influenced thereby, I think is unquestioned. However, there is no convincing evidence that the Metropolitan has

actually saved money thereby. I am not referring to the immeasurable value and benefit of those services to the community, but to the dollars and cents savings to the Metropolitan over the cost of the activities. There are too many other influences and factors entering in to permit of the accurate valuation. There have been other powerful agencies, entirely independent of the life insurance companies, begun long before the Metropolitan began its activities, which have been operative along those lines. In this connection it is interesting to note that, though the Metropolitan's improvement in industrial mortality since beginning these activities has been greater than that in the general population, the other large industrial life insurance company, the Prudential Insurance Company, which has not undertaken such activities, has experienced an improvement in mortality corresponding in general with that of the Metropolitan. Some of the Prudential's improvement might be the result of the Metropolitan's activities, but it is most unlikely that all of it is.

There is a point of view in connection with the advisability of a large life insurance company, with policyholders numbering upward of one-fifth or one-fourth of the population of the country, engaging in such an extensive way in social welfare activities, which might be considered the responsibility of the state. That is, it might encourage agitation for the state to take over the operation of those large companies, on the grounds that they have already usurped functions of the state though they are not responsive to the public will through the proper channels, namely through the electorate. Though we all accept today as proper state functions many activities which a few years ago we stigmatized as "socialistic," most of us here, I dare say, are not quite ready to concede that our large life insurance companies should be absorbed by the state.

This consideration has probably had little if any weight in the general attitude of the life companies' refraining from entering into conservation in the sense implied by Mr. Whitney. The probable reason is that the practicability or desirability of it from the point of view of saving money has never been present as it has in the other lines of insurance. As suggested by Mr. Whitney, in his reference to the usual long term character of the life insurance coverage as contrasted with the short term

character of the other lines, no activities can prevent eventual death; the best that can be expected is postponement of death. Consequently, speaking most generally—because if all life insurance were term insurance, it would not apply as fully—the effect of such "conservation" on the life insurance companies would merely mean the postponement of the claim loss and not complete relief therefrom. In other lines, the activities are intended to and result in the company not having certain losses which it otherwise would have.

The marked difference between the character of, and the public official attitude toward, life insurance as distinguished from that applying to other lines of insurance, forces a different point of view as to conservation. The public attitude, reflected through the legislatures and state officials, toward life insurance companies, is to require them to charge redundant premiums and to carry reserves on mortality tables which are known to provide for heavier mortality than is normally to be expected. Despite the great improvement in mortality which has taken place over the past generation or two, the states have been reluctant or slow to amend their laws to permit the non-participating life insurance companies to charge lower premium rates which would be more consistent with the demonstrated lower mortality. Witness also the attitude of the insurance commissioners in connection with the total and permanent disability coverage; recently setting forth rules requiring the life companies to restrict the benefits and in effect to charge higher premiums because the companies had been experiencing losses under the old method.

In the case of other lines of insurance, more particularly fire insurance and workmen's compensation—probably because of the greater public consciousness of their need—the attitude has been quite the reverse. There is constant agitation and legislation aimed to reduce the insurance premium rates, even when the companies can demonstrate that they have been suffering "underwriting losses." These other lines are forced to take steps to cut down their losses.

In other lines of insurance, with the possible exception of personal accident and health, the "prevention" measures are applied to individual risks and immediate results can be expected. In life insurance, and in personal accident and health insurance, the

activities would necessarily have to be general. With the possible exception of direct attention to some comparatively few cases of disability claims, it would be impractical to follow the individual risk. It might be that the premium for some of the policies of very large amount would permit of some expense being incurred in an endeavor to guide the individual insured in more careful living. But not only could no coercion be applied, as in other lines, by threat of cancellation or refusal to renew, or by increase in premium, but it would be impolitic, because the individual would resent any such interference with his personal affairs.

Where, therefore, the activities would have to be applied generally, the "returns" in the way of benefit to the individual life company, or to the companies collectively, would be negligible in comparison with the cost, and at best long deferred. It would not pay. It would be like spending money to heat the great outdoors in order to keep your house warm. Some day our ingenious scientists may bring that to us, but it will be through collective or community enterprise, not by the individual householder.

I do not think Mr. Whitney adds anything to his general thesis by his reference to, or instance of, life insurance, beginning on the top of page 233. Even in an academic discussion of insurance principles it is generally objectionable to center attention on a single risk. It leads to confusion. Life insurance, as well as other insurances, is only made practically possible by the inclusion of large numbers, so that the law of averages may be operative. Of course Mr. Whitney instances a single life as representative of the whole, but then makes the rather confusing statement: "If he fails to reach this point (his "insurance expectancy") the loss will have to be made good by the accumulations on the policies of those that have lived longer." But who are those who have lived longer, if their representative, or "average case," has lived short of his "insurance expectancy"? The company does not break even, or make or lose money on a single case. In fact it is not concerned with the single case. Its concern is with the experience of the whole. I think that if it were desirable for completeness sake, to include life insurance in the demonstration, it would have been better to have adhered more closely to the fundamental basis, that is large numbers. To me it would

have been more clearly convincing if the example had read somewhat as follows: "If the life insurance company could by its efforts bring about that a smaller number would die in a given time than otherwise expected, or provided for, a benefit clearly accrues to it." But the reverse would not necessarily be true, because of the make-up of the life insurance premium. A life insurance company does not necessarily "lose" money even if its mortality be somewhat higher than provided for by the basic mortality table. Interest and expense are integral elements in the make-up of the premium. Interest beyond, or expense less than, that provided for in the premium might offset the "mortality loss." This again emphasizes the difference between the life insurance business and that of other insurance lines. In other lines there is a distinction between the "underwriting" and the "investment" operations, so much so that it had almost become the practice among some insurance carriers to accept an "underwriting loss" as inevitable and to rely on "investment" operations for any company profit.

There is also another feature, incident to life insurance, which distinguishes it from other lines. That is, that owing to the policy reserves, an essential feature of level premium life insurance, the amount "at risk" is only the difference between the amount payable as a death claim and that reserve: the reserve being the self insurance provided by the insured.

In life insurance we can hardly refer to a "time-lag" between the effecting of the saving and its reflection in the premium charges—"manual" rates. It has only been by hard struggle that non-participating companies have recently been able to induce some of the states to permit them to base their premium rates on a table of mortality based on the experience in the years 1900 to 1915, though mortality in general has much improved in the intervening years (from 15 to 30 years). And in the other states the companies must charge gross premium equal to or in excess of those called for by a mortality table made up from mortality experience which applied more than seventy years ago. Seventy years is quite a "time-lag."

Mr. Whitney's subject and his general treatment is so interesting and valuable for the desirable, though possibly somewhat abstract, consideration of some of the phases of the insurance

business, that I almost wish that he had left out all reference to life insurance. I think there is little hope that the life insurance companies can be enlisted in any campaign of "prevention" or "conservation" on the grounds of self interest.

In connection with the general subject matter of the paper I would point out that Mr. Whitney has reference throughout more particularly to stock or non-participating companies. The time-lag between reduction of loss and its reflection in the charges to the insured, and the interim gains or profits to the carriers, refer to stock or non-participating companies. In mutual companies, there is no "profit," and reductions in loss, through whatever agency they may have been effected, are passed on to the insured immediately upon being ascertained, through the "dividends" paid or by "reductions" on renewal. This assertion is correct in principle even though the determination of the policyholders' "dividend" or "refund" be not accurate or equitable to the *n*th degree. Of course, even for mutual companies, the "manual" rates will not immediately reflect the savings.

Much of the activities along the lines of prevention and conservation, worthy and necessary as they may be, are activities which an enlightened public mind should require the state to perform efficiently: such as reduction of fire hazards, safeguarding property, safeguards in factories, mines, etc., boiler inspections, elevator inspections and so on. Most of the states have agencies operating along these lines, but the insurance companies do not trust to them completely; they have not been thoroughly efficient nor entirely honest. These company activities have encouraged, if not originated, a public attitude which is wrong, namely that those matters are solely the insurance companies' responsibility. The public sees the benefit, or saving, to the insurance companies, but cannot or will not see the great public benefit, and hence does not fully sense its own responsibility.

Laws taxing the insurance companies specifically for public welfare activities, such as those taxing fire insurance companies for the benefit of exempt firemen, or for some of the expense of fire departments, or along similar lines, are wrong in principle. The public is the direct beneficiary of public welfare activities undertaken by itself or by private agencies. The insurance companies are only incidental beneficiaries. The insurance companies

render a worthwhile service in the distribution of the concentrated loss. They should not be required to perform functions of the state or community. The public already owes much to the insurance companies for the reduction of loss of life, limb and property. Despairing of the Utopian state of a fully awakened public consciousness of its own responsibility, the insurance companies will have to continue their activities for their own protection.

Were it not that it would be merely a "counsel of perfection," and disregardful of the exigencies of the case, I would rather advocate that all lines of insurance carriers should be relieved of the burdens of "conservation," and have the public assume its proper functions; leaving it to the insurance carriers to join the other good citizens, as part of the public, in doing their part in the alleviation and prevention of suffering, distress and waste. "The Mills of the Gods grind slowly." So we will probably have to wait until the static condition matures, to which Mr. Whitney alludes, before we can hope for the public to directly assume its full responsibility, whether it then be conscious of it or not. In the meantime, the stock companies will continue to stress their "conservation" or "prevention" services, and the state funds and mutual companies, their lower costs.

MR. RALPH H. BLANCHARD:

In discussing a paper one usually has the satisfaction of indicating certain errors of fact or theory. In the present case, one can only indicate agreement with the conclusions of Mr. Whitney, and support his emphasis on the increasing importance of conservation in insurance.

But this seems to be an opportune time briefly to discuss certain thoughts which may supplement this altogether excellent paper:

I. Attempts are made in various sorts of insurance to measure the effect of preventive activity. To the extent that credit is given in advance, by means of schedule rating or otherwise, for the expected effect, the insurer does not directly benefit through reduced losses. Here preventive activity, considered narrowly from the point of view of the insurer as a commercial enterprise, is chiefly a competitive weapon.

II. One often hears the proposition advanced, in opposition usually to proposals for new forms of social insurance, that "what we want is prevention, not insurance." This argument comes perhaps most frequently from insurance men. Whatever one may think of a given proposal on other grounds, this attack seems to be fallacious, particularly if it is accompanied, as is often the case, by calculations to show that the insurance will prove enormously expensive.

Insurance develops knowledge of the existence of hazards and indicates their relative importance. It furnishes the best possible basis for approaching the problem of prevention; and, because of the efficacy of prevention in lowering insurance costs, the greatest possible stimulus to preventive work. Further, the effectiveness of the stimulus bears a direct relation to the efficacy of given preventive efforts. In other words, the greater the loss one can prevent by given efforts, the greater the reward in reduced costs, and hence the greater the stimulus to activity.

Not only does the application of insurance to a particular hazard problem tend to develop preventive work and to put it on the most effective basis, but, to the extent that the preventive work is successful, the cost of insurance and the burden of its requirement is lessened.

Prevention and insurance are not mutually exclusive nor alternative methods of approach to a problem of hazard; they are complementary and mutually helpful.

III. During the past two years of depression, the statement has frequently been made, and often by prominent business men, that our present commercial, financial and industrial system is on trial. Some have expressed doubt as to the result of the trial.

With the growth of corporate enterprise, the gathering of individual corporations into groups under common management, and the development of cooperative activity by affiliation for the promotion of common interests, private initiative has created organizations which, in size and importance, outrival many political units. Inevitably the question arises whether these institutions are to continue to furnish the services for which they were organized. There is, and will be, agitation for governmental activity to supplant them in whole or in part. And this is particularly true of the insurance business. In addition, groups

within the insurance business have been formed, based on varying theories of organization and operation.

If insurance, whether private or governmental, is to render the greatest service to the public, it must, as the institution best adapted to it, develop preventive work, both intensively and extensively. And it seems to the present writer that institutions will be judged more and more in the future on the basis of their contribution to public welfare, rather than on the basis of their success in partisan warfare. Even success in partisan warfare might be promoted by greater attention of each party to increasing its own merits, rather than to pointing out the defects of its competitors. Many movements and institutions have been nurtured largely on attacks which have brought public attention and sympathy.

The institution of insurance and its constituent parts can hardly make a more effective plea for public approval than by supporting work which will reduce losses, decrease the cost of insurance, and, by decreasing the hazards in certain directions, pave the way for the extension of insurance in others.

MR. C. A. KULP:

Not only for the public but for those more directly connected with the business of insurance Mr. Whitney has done a service in this brief and lucid critique of the relation between conservation or loss prevention and insurance or loss indemnity. It is the current custom to use the two rather indiscriminately, or at least as if they were only two closely similar phases of the same institution. Mr. Whitney does not say so, but I seem to read between his lines an intimation that this confusion does no good and may even do harm to the cause of prevention. It is too often assumed, by company executives as well as others, that considerable savings from loss prevention activities are a mere matter of emphasis, and that lower loss ratios will be the nearly automatic product of spending more money, printing more placards, holding more pep meetings, and building up larger safety-first organizations.

Mr. Whitney points out very clearly that the question of the feasibility of expansion of loss prevention activities is more fundamental than is comprehended in this simple point of view.

Loss prevention is to be sure a matter of money, and in its early stages, when you can show concretely to the insured the dollars he can save by following this or that recommendation, a relatively simple matter. When, however, the intrinsic risk of the insured, as in workmen's compensation, has increased so greatly as to absorb all the savings of prevention work and this work begins literally to cost someone money over and above its economies, the whole question becomes one of concern for company, insured and public. Mr. Whitney does not stop to do it, but one may raise a number of sub-questions that go to the very basis of the prevention function. What incentives can we devise to encourage a risk to go on doing good beyond the point where good-doing adds to net income? Should we perhaps segregate that part of the premium which is expended for prevention and show the insured graphically that he is paying for two services and getting them? Is it good psychology to make people believe that the mere entry of a risk into an insured group is likely to produce a lower loss cost? Most important of all: what are we going to do with the small risk, to whom we are not able to offer the saving incentive even in the early stages?

I am not able to follow Mr. Whitney in all of his side arguments and *obiter dicta,* though these with one exception are of minor importance. There is, it appears, a bit of special pleading for a more liberal attitude by state insurance commissioners in their policies on expense loading limitations for casualty companies. (The principal criticism by the companies has been, one might observe, not that the total loading is too small but a particular part of it, that for acquisition expense.) But I doubt very much if any advantage would be gained by going back to a policy of *laissez faire* in rate regulation and in view of the pitch of competition between casualty companies, there are possibilities of grave loss. Nor is comment on this section of Mr. Whitney's paper extraneous, for he later on insists on the broad social interest and implications of all prevention work. If in the future the private companies are unable to continue this work without impairing their first and principal purpose, the only logical agency to carry on appears to be the state. The only other alternative would be to have the state subsidize, directly or indirectly, the companies for deficits incurred in their non-

insurance functions. In either event, the casualty insurance business will be in for more social regulation, not less. One cannot logically expect the state to extend its sphere in one direction and narrow it in another.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. ALBERT W. WHITNEY:

I am pleased to find so general an agreement among those who have taken part in the discussion of this paper with regard to the theory and the importance of conservation. This does not leave a "rebutter" much ground in this part of the field. The disagreement appears to be with regard to the scope of its application. Mr. Breiby feels that if lives are to be saved it should be done specifically as life saving and not as insurance. He objects even to have life insurance used as an example. In passing I must insist, however, waiving all other questions, that the statement that he particularly objects to on page 233 is correct actuarially. Insurance is based upon probabilities but the probabilities in insurance are had by ascribing to each single risk, in advance, the qualities of the average risk. It then becomes possible to compare the performance of a particular risk with the performance of the average risk which serves as type.

It was not within the scope of my paper to advocate or even to discuss the practicability of applying conservation to life insurance. The only statement that I made was that a consciousness that life saving was part of the insurance job had struck life underwriters (so far as it had struck them at all) only very recently. However, I should not at all mind having to defend the thesis that conservation in life insurance was desirable both from an economic and from a social point of view. The companies that are doing the business that way seem satisfied that they are doing it on economic grounds. Witness Mr. Craig's paper before the International Congress of Actuaries, June, 1927. There would seem by *a priori* reasoning to be a good deal of margin for such work. If the average lifetime of the assured could be increased one year, for instance through a judicious system of periodical medical examinations, (which it is not at all unreasonable to believe) it would mean, in an ordi-

nary life insurance policy of $10,000 the setting free of a sum of $600 or $700, made up from interest accumulating during the added year and from the payment of an additional premium. A great deal of medical attention can be given with that amount of money when the service is handled in a thoroughly organized way.

If it can be shown that conservational work in a given field produces a saving and if this work can be done with the full approval of the assured then there can certainly be no question of the advisability or even the moral obligation on the part of the company to carry it on, particularly since conservation not only means a saving in money but a saving in some cases, as in life insurance, of values that far exceed those that can be measured in money.

Anyone who knows the most recent tendencies in the economics of medicine will realize how very much to the point it is for underwriters to be thinking about the relationship between insurance and medicine.

Mr. Breiby raises the question of "heating the great outdoors", of time-lag and of the applicability of the argument for conservation to mutual companies.

Even "heating the great outdoors" pays in some cases. Both the Save-A-Life work that I referred to on page 236 and the educational work that the National Bureau is doing are on a perfectly general basis and yet they are absolutely worth doing because of their economic value to the Bureau companies. Similar work in the fire field is being done by the National Board of Fire Underwriters. Where one company cannot afford to undertake work of a general character, it is often feasible to have it done through such a group effort.

In life insurance the time-lag is exactly the time that elapses before the mortality table catches up with the facts, seventy years it may be, so that in life insurance we get the supreme conditions for capitalizing conservational activity.

What I had to say applies equally well to mutual companies as to stock companies. In the case of stock insurance the savings during the time-lag go to the stockholder, in the case of mutual companies to the policyholders. The principle, however, is exactly the same and the economic inducement is the same.

Mr. Blanchard's points are interesting. Merit rating is in

effect a system by which the interest of the assured in prevention is bought through the anticipated sharing of profits, not the profits of the group but the profits that should go to the assured individually. It has a competitive value; that is, it provides a basis upon which competition can operate, but its chief value is in getting the assured himself aroused.

It is interesting that all three reviewers have referred to the effect of conservation upon the question of state insurance. Mr. Breiby feels that the companies by going into conservational work may tempt the state to undertake the work also and perhaps take it away from the companies. My reaction would be exactly the opposite, namely, that the state if it found that the insurance companies were not developing the conservational side of insurance, would turn them out in order that the business might be more effectively developed.

From the standpoint of the companies themselves, the most important aspect of conservation is undoubtedly its effect upon the public. The public has come to a time when it is going to insist that the greatest possible economic and social results shall be had out of the conduct of the world's business. If these can be had through the operation of private business, well and good; then we shall go over into a more socialized period through the orderly development of all the very great possibilities of our existing system. If private business is not so developed as to produce the highest economic and social results, then the public is likely to resort to more extreme measures such as setting up the state in business. The capitalistic system is on trial today as never before, and if insurance desires to avoid being taken over by the state, the best thing it can do is to produce every last ounce of economic and social effect that can be had under the present system. One of the great values of the conservation movement is as a means of demonstrating that private insurance has potency as a social instrument.

Mr. Kulp asks what is to happen after the static condition has been reached, when what is gained through saving is equal to the cost of making the saving. The assured should make no objection to having the conservational cost passed on to him up to this point but he will presumably object to going beyond. In a field in which the values are purely economic, it is hard to

imagine conditions under which prevention should be carried further. In a field in which there are other values, human values which are not readily measured in money, he will be willing to go further only as these values appeal to him. It is doubtful as a matter of fact whether preventive activity can be expected in general to go beyond this point. To the degree to which extra-economic values are potent there will be a tendency to find a way to give such values further economic recognition.

I agree with Mr. Kulp as to the difficulty of the small risk problem; the small risk is the *"enfant terrible"* of the insurance business. "To him that hath shall be given" is true in casualty insurance in the form "To him that hath a sufficient experience shall be given a merit rating that will be an inducement for the exercise of preventive activity and to him that hath a sufficiently large business to make the premiums pay the cost shall be given preventive service". The small risk has however neither experience on which to base a lower rate nor will the possible savings justify the insurance company in incurring the expense that is necessary to bring about the improvement. It seems as though small risks as a matter of necessity must find their salvation therefore on a group basis. Their experience must be combined to produce a dependable average and they can look for lower rates only as the results for the group improve. Until the small risk can emerge from the great mass of other small risks in such a way as to demonstrate its superiority, it would seem as though the conservational action of insurance would have to be exerted on the group.

With regard to the regulation of expense loading, I am not advocating the abolition of all regulation but a discriminating latitude that will let the companies develop their conservational activities to the utmost.

REVIEWS OF PUBLICATIONS

RALPH H. BLANCHARD, BOOK REVIEW EDITOR

Some Recent Researches in the Theory of Statistics and Actuarial Science. J. F. Steffensen. Cambridge University Press, Cambridge, 1930. Pp. 52.

Under this title are published, by the Cambridge University Press for the Institute of Actuaries, three lectures delivered in March 1930, at London University.

This is the type of work often cited by the so-called "practical" men as evidence of the futility of most academic research. It brings out theoretical objections to certain practices in the construction of mortality tables and calculation of monetary values, in the face of the fact that upon tables so constructed and values so calculated the huge business of life insurance has been successfully carried on for more than a century.

Yet it is not without significance that these lectures have been published at the instance of the Institute of Actuaries of Great Britain whose leaders have been in the past, as they are at present, in responsible charge of great insurance companies doing a world-wide business in many branches of insurance. It may make little difference in practice whether we pay an ordinary-life policy as an endowment when the policyholder attains age 96 because our reserve has been calculated according to a table that makes it equal the face of the policy at that time or because we believe from our tables that according to natural law men do not live beyond that time and the occasional individual who does is, as it were, a skip of nature and for our purposes should be regarded as dead. But it does make much difference which view we take when offering our explanation of our action to others who thereby judge our grasp on the fundamentals of our business. The book is a plea for rigorous thinking about fundamentals. The author says, "I therefore propose to give an account of some of the efforts I have made to introduce more rigour into certain questions of theoretical statistics and actuarial science".

The author does not hesitate to use appropriate mathematical methods in his analysis, though he does not go beyond what one who has passed the Actuarial Society examinations may be ex-

pected to know. If one has not kept up one's mathematics the reading will be difficult. The senior actuary who takes sufficient interest in pure mathematics to keep up his proficiency will enjoy the book. It should be read by students, not so much for the things established as for the influence of the author's point of view and the examples of error which may result from loose thinking.

The thesis presented in the first lecture, based upon the nature of mathematics as "a science that investigates the relations which exist between numbers", is "Statistical and actuarial theory must therefore always be presented in such form that the theoretical relations or assumptions contain no contradiction". He points out that this is not always true of the textbooks' presentation of the nature of mortality tables and proceeds to develop an approach which is entirely self-consistent. He shows another violation of this principle in the treatment of relative reserves by different tables in the Institute of Actuaries' Text Book. He finds similar contradictions in the usual treatment of the problem, in the statistical field, of Presumptive Values of Frequency-Constants.

The second lecture, starting from the fact that "mathematics is the proper instrument for justifying *methods of numerical approximation*", notes the tendency to adopt methods of interpolation (or "intercalation" as the author thinks the more common case should be called) which have been found useful in a few trials in the past without investigating their appropriateness for further use. The test, he points out, is to be found in the size of the remainder term in any particular application. He expresses the opinion that the most urgent problem to be faced by those dealing with numerical approximations is to find suitable limits to the remainder term. He then illustrates how it can be done for certain functions, developing by means of inequalities maximum limits for the remainder. This leads him to a discussion of certain other inequalities which he believes will be useful to actuaries.

Noting that "mathematics is employed for *describing facts of observation*" and that the formulas used in statistics for this purpose are often of an entirely empirical nature, the author suggests that cases do arise where theoretical reason can be given

for believing that one formula will fit the facts better than another. In the third lecture he briefly reviews the Pearsonian and continental types of frequency functions from this point of view. He shows that at least some of the Pearson curves may be developed as probability functions expressing the result of a compound experiment. He points out that the continental forms have been developed from Gauss' normal curve function or Poisson's exponential function by development in series analogous to the development of formulas in physics by use of trigonometric series. He shows a generalized development of the continental types of series and after noting some of their characteristics expresses his own preference on theoretical grounds for the Pearson system "as a rule."

As noted earlier, it is the present reviewer's opinion that these lectures should be carefully studied by actuarial students. It is as important to know why we adopt certain methods as to know that we may use them safely.

A. H. MOWBRAY.

An Elementary Treatise on Actuarial Mathematics. Harry Freeman. Cambridge University Press, Cambridge, 1931. Pp. x, 399.

This book was written as a textbook for actuarial students, primarily for candidates preparing for the examinations of the Institute of Actuaries of Great Britain. If the author had kept in mind the fact that this book, in replacing Henry's text, would probably become the prescribed text for the examinations of the American actuarial societies, he might have made it fulfill more completely the requirements for these examinations. It was partly or perhaps largely from the point of view of its suitability for the American actuarial student that the reviewer read this text.

An attempt to cover in one book the subjects of Trigonometry, the Differential and Integral Calculus, the Calculus of Finite Differences and the Theory of Probability must surely result in an inadequate treatment of one or more of these subjects. I presume no attempt was made to cover the subject of Trigonometry completely, as this subject is only incidental to the British examinations, and the American student will still have

to read his textbook on Trigonometry for much of the information required of him. The chapter on Trigonometry, excellent so far as it goes, does not include any of the important applications of the developed formulae, such as solving triangles, etc. The author does, however, touch briefly on the periodicity of trigonometric functions, and the inverse trigonometric functions, points with which our American texts on Trigonometry fail to deal at all adequately, but upon which our actuarial examiners feel themselves free to set questions.

In the chapters on Differential and Integral Calculus the author has enlarged considerably and greatly improved on the treatment given in Henry's text. It would be better, perhaps, if this subject were treated in a separate textbook where it could be covered more thoroughly, where fuller explanations could be given, and more difficult examples worked out in the body of the text. Many students will find some of the examples set at the end of the various chapters rather difficult, even if they have mastered all the theory given in the text. The author is to be congratulated on the splendid sets of examples given throughout the text, supplying the student with ample material for practice. The treatment of "Double Integration" is rather brief, even for the space allotted to the whole subject.

The treatment of the subject of Finite Differences is a great improvement over that in any previous textbook, and it is for this reason especially that the book will be warmly received by American students. Chapter II gives a splendid introduction to the whole subject. Chapters III, IV, V and VI are devoted to "interpolation". The abhorrence which beginners have always felt for the central difference interpolation formulae, due primarily to the methods given for their development, should quickly disappear with this book at hand. Many will welcome the introduction for the first time of Sheppard's notation and rules as applied to central difference formulae. In Chapter VI the discussion of the different results obtainable by using different methods of inverse interpolation is very enlightening. Interpolation for functions of two variables is discussed in Chapter VIII.

In Chapter VII, Summation or Finite Integration is well and adequately treated. It is rather a pity that the interesting proof

given for the important result stated in Example 10, page 110, is somewhat marred by two errors which, however, counteract each other and leave the correct result. In the evaluation the lower limit outside of the bracket is incorrectly written as $-\frac{1}{2}(n+1)$ instead of $-\frac{1}{2}(n-1)$. If the latter value had been used and the correct value for $x^{(3)}$ substituted where $x=\frac{1}{2}(n+1)$ and $-\frac{1}{2}(n-1)$ the second last line would become

$$u_0\left[\frac{n+1}{2}-\left(-\frac{n-1}{2}\right)\right]+\frac{1}{6}\left[\left(\frac{n+1}{2}\right)\left(\frac{n-1}{2}\right)\left(\frac{n-3}{2}\right)-\left(-\frac{n-1}{2}\right)\left(-\frac{n-1}{2}-1\right)\left(-\frac{n-1}{2}-2\right)\right]\Delta^2 u_{-1}$$

which reduces to $n\,u_0+\frac{1}{24}(n^3-n)\,\Delta^2 u_{-1}$.

In Chapter VIII the author very wisely devotes little space to the "Differences of Zero" which have long since passed out of use for any other purpose than examination questions. The fundamental relation $\Delta^n 0^m = n\,(\Delta^{n-1} 0^{m-1} + \Delta^n 0^{m-1})$ can be proved very easily by means of the theorem

$$f(E)\cdot o^n = E\,f'(E)\cdot o^{n-1},$$
$$\text{where } f(E) = (E-1)^m \equiv \Delta^m.$$

(See page 245, Journal of the Institute of Actuaries Students' Society, Vol. II, No. 4.)

In Chapter XIII a brief introduction is given to the subject of Osculatory Interpolation and Sprague's formula is developed. In view of the uses of such formulae in this country more space might have been given to this topic. The student will find the development of Karup's and other useful formulae in the journals of the American actuarial societies.

Attention might be drawn to the unusual procedure in Article 7, page 229, and elsewhere. In this article the author develops from first principles the special form of the Euler-Maclaurin expansion, and states that the general form can be obtained by changing the origin, and the unit of measurement from 1 to r. It is very difficult, especially for a beginner, to pass from a special case to the general case, and it is sometimes impossible to do so. The reviewer feels that it would be much better to develop the general Euler-Maclaurin expansion from first principles first and then obtain the special form by putting $a = 0$,

and $r = 1$. The development of the special formula from first principles might well be left as an exercise for the student.

On page 302, Example 5, the formula for the sum of the p^{th} powers of the first n natural numbers is given as

$$\sum_{r=1}^{r=n} r^p = \frac{n^{p+1}}{p+1} + \frac{1}{2} n^p + \frac{1}{12} p\, n^{p-1} - \frac{1}{720} p(p-1)(p-2) n^{p-3} + \frac{1}{30240} p(p-1)(p-2)(p-3)(p-4)\, n^{p-5} \cdots\cdots\cdots\cdots \text{(A)}$$

This is not what one obtains by putting $a = 0$, $r = 1$, and $u_x = x^p$ in the general form of the Euler-Maclaurin Theorem which he quotes at the beginning of the example. If these substitutions are made we obtain (on replacing x by r)

$$\sum_{r=1}^{r=n} r^p = \frac{n^{p+1}}{p+1} + \frac{1}{2} n^p + \frac{1}{12} p(n^{p-1} - 0^{p-1}) - \frac{p(p-1)(p-2)}{720} (n^{p-3} - 0^{p-3}) + \frac{p(p-1)(p-2)(p-3)(p-4)}{30240} (n^{p-5} - 0^{p-5}) \cdots\cdots \text{(B)}$$

If p is an even number, formula (A) gives the same result as formula (B), but if p is an odd integer formula (A) does not give the correct result, because in such cases the second part of the last term taken in formula (B) is not zero. This difficulty can be easily overcome, however, by taking unity as our lower limit of the integral instead of zero, when the formula becomes

$$\sum_{r=1}^{r=n} r^p = \frac{n^{p+1} - 1}{p+1} + \frac{1}{2}(n^p + 1) + \frac{p}{12}(n^{p-1} - 1) - \frac{p(p-1)(p-2)}{720} (n^{p-3} - 1) + \cdots\cdots;$$

which gives the correct values for all values of p equal to or greater than unity.

Chapters XVIII and XIX give a splendid treatment of the Theory of Probability. The examples are well selected and graded. For the use of American students it is too bad that the author did not include a treatment of "Inverse probability" required for actuarial examinations on this continent. One can, however, find an adequate treatment of this topic in Hall and Knight's Higher Algebra.

As one would expect, in the first edition of a textbook requiring such a great amount of detailed work, unusual symbols, etc., some typographical errors and slips occur. A few were noticed

in the more or less hurried reading, as for example: Page 54, Example 16, line 2, u_0; page 72, line 9, v_0 for v_{-2}; page 143, line 7, $\frac{1}{n}$ for $\frac{1}{n^4}$. These and others will no doubt be corrected in a list of errata which will probably be published shortly.

If the points specially noted in this review are errors and omissions it should not be inferred that the reviewer does not value the book highly. These are mentioned in the hope that the author will rectify them as far as possible in a later edition. A textbook on the Calculus of Finite Differences was sadly needed, and the author is to be complimented on placing a book so well written and so well printed in the hands of our students.

L. A. H. WARREN.

Compound Interest and Annuities Certain. Ralph Todhunter; Revised and Enlarged by R. C. Simmonds and T. P. Thompson. Cambridge University Press, 1931. Pp. xiv, 262.

We have a number of very admirable textbooks published on this continent, but none of them have quite covered the field which Todhunter's book on Compound Interest and Annuities Certain did, though published some thirty years ago. Methods of dealing with problems in finance have changed considerably in this time, and new types of problems have arisen. The appearance of a revised edition of Todhunter's work by Simmonds and Thompson was therefore very welcome indeed. This is more than an ordinary revision, however, as a new chapter has been added, and the order of the subjects treated has been changed somewhat, but the most valuable alteration has been the introduction at the end of each chapter of worked examples which illustrate and help very materially in the better understanding of the principles involved. This book is without doubt the most up-to-date and the best treatment in print of the field it covers. However, its value as a textbook would have been greatly increased if the authors had included at the end of each chapter a list of well-graded problems (with answers) by means of which students could test their mastery of the principles discussed. May we hope that a later printing of this text will include at least a somewhat lengthy list of miscellaneous problems at the end of the book.

Chapter I introduces the nominal and effective rates of interest and discount, and the force of interest and of discount, and develops the fundamental relations between these quantities. In the second Chapter we have, *inter alia,* the development of the ordinary rules of business for finding (1) in what time a sum of money doubles itself at a given rate of interest, and (2) the equated date of payment of several sums due at various times.

In Chapter III formulae for the accumulated amount and present values of annuities are developed, while Chapter IV shows the analysis of the annuity in general terms. In the important problem of the amortization of a debt by equal payments at equal intervals he shows what part of each periodic payment is principle and what is interest.

The introduction of a full chapter on Capital Redemption Assurances is a good thing. This is the first time this subject has been adequately treated anywhere. The student who has read Spurgeon's treatment of Premiums and Policy Values will note the close analogy between the values here obtained for premiums, policy values, amounts of free or paid-up policies with those obtained in the case of life insurance paid for by annual premiums, or more frequently. The student will appreciate this chapter more if he has read Spurgeon first, but the authors are to be congratulated on the inclusion of this valuable chapter here.

In Chapter VI the authors treat several important problems not usually included in American texts on this subject, such as debentures redeemable at the option of the debtor, and the consolidation of annuities—a problem which frequently arises in connection with loans raised by municipalities, and in the refunding problems of our governments. In the illustrative problems at the end of this chapter the complications arising from the incidence of the income tax are clearly explained. Such problems are of growing importance in this country, but more so in Great Britain, where at present the income tax is so heavy. In Chapter VII is shown how the income tax affects the working of "loans repayable by accumulative sinking funds".

The most difficult problem in financial transactions is to determine the rate of interest involved, other factors being known. In most cases, such as in annuities-certain and bonds, if the

fundamental equation of values be written down it involves the rate of interest to a fairly high power. The solution of such an equation is not obtainable exactly by ordinary algebraic methods. In such cases we are forced to be content with an approximate value of the rate of interest involved. The student will do well to note that the formula developed in Chapter VIII for the rate of interest earned on a bond, namely,

$$i = \frac{g - \frac{k}{n}}{1 + \frac{n+1}{2n} k} \quad \text{or } i = \frac{2\,(n\,g - k)}{n\,(k+2) + k}$$

gives the effective rate in the case of a bond bearing annual coupons. Since the great majority of bonds bear semi-annual coupons, most American texts use the formula $j = \frac{4(n\,g - k)}{2n\,(k+2) + k}$ from which the effective rate can be obtained. In Example 8, page 198, Hardy's formula, $i = \frac{2\,I}{A + B - I}$ is developed, a formula of frequent use in this country, as for example, by insurance companies in computing the interest earned on their investments.

During the last few years the tendency in all branches of scientific investigation, as well as in problems of finance, has been to bring to the rescue the methods of the calculus for the solution of many problems hitherto solvable only approximately. In Chapter IX the authors have so introduced the differential calculus and the calculus of finite differences. On page 214 the important formula $(IB) = -(1+i)\frac{d\,B}{d\,i}$ is developed. The authors might have gone one step further and developed Lidstone's well known formula in terms of finite differences for the value of an increasing benefit,

$$(I\,B) = -(1+i)\frac{1}{\Delta i}(\Delta\,B - \tfrac{1}{2}\,\Delta^2 B + \tfrac{1}{3}\,\Delta^3 B - \cdots\cdots).$$

This formula is developed in Spurgeon's textbook on Life Contingencies, page 72. It is, however, applicable to the evaluation of increasing annuities certain, and many who deal with such never study life contingencies. It would have made the book more complete if this formula had been included here.

Chapter X is devoted to the methods of constructing and checking tables of the important interest functions

$$(1+i)^n,\ v^n,\ s_{\overline{n}|},\ a_{\overline{n}|},\ \frac{1}{a_{\overline{n}|}},\ \ddot{a}_{\overline{n}|},\ \ddot{s}_{\overline{n}|},\ P_{\overline{n}|}.$$

A short set of tables is included.

L. A. H. WARREN.

Versicherungswesen. Band II: Güterversicherung. (*Insurance principles. Vol. II. Insurances of property interests*). Alfred Manes. B. G. Teubner, Leipzig and Berlin, 1931. Pp. x, 316.

This text on the insurance of property interests (generally, indemnity insurances) is the second volume of the fifth and enlarged edition of Professor Manes' noted system of insurance principles. The first and introductory volume appeared in 1930 and was reviewed in these *Proceedings* (Vol. XVI, p. 374). The third volume, dealing with insurances against essentially personal contingencies, (or as recognized in the British and American insurance nomenclature, 'investment insurances') will appear late in the autumn of 1931. The third volume will include social insurance.

Dr. Manes had the assistance of Dr. Erich Carus in preparing the present edition of Volume II.*

Dr. Harold von Waldheim is assisting Dr. Manes with the revision of Volume III.

The volume before us should be of especial interest and value to our members for two reasons: first, it includes a description of the philosophy and practices of most of the branches or lines of coverage which are denominated "casualty insurance" in the United States; second, it presents so admirable a classification of the branches of indemnity or property interest insurance, that it will arouse wholesome doubt in the minds of the members of this Society as to the intellectual validity of our American system of classifying and segregating lines of insurance. It is hoped that the more enterprising and inquiring members will compare Manes' concepts of insurance in general with those of the French school, notably the classification given by Paul Sumien in his

* Dr. Carus' most excellent treatise on private health and accident insurance is reviewed in this number of the *Proceedings* (page 219).

recently published treatise on insurance and reinsurance.* Sumien and the French school rest upon Colbert's and Valin's precepts; Manes apparently draws upon the insurance classifications in the world literature.

Much ink has been spilled in the attempt to distinguish *in rem* from *in personam* in the discussion of insurance fundamentals. Whether the *"Kampf"* over insurance definitions is material or not may be seen from Krosta's lusty remarks on the "sanierung" of the insurance business in "Das Versicherungs-archiv", Vienna, July, 1930, or in Dr. Otto Hagen's recent remarks on Prof. Ernst Bruck's attempt to systematize insurance contract law (Zeitschrift f. d. gesamte Versicherungswissenschaft, Berlin, January, 1931, p. 83)! Further light on Manes' ideas, however, will be found in the articles "Begriff" and "Versicherung" in the *Versicherungs-Lexikon* edited by Manes and published by E. S. Mittler and Son in Berlin during 1930. For the convenience of our students the Manes† condensed classification of insurance is set forth on the opposite page.

* Sumien, Paul. *Traité théorique et pratique des Assurances Terrestres et de la Réassurance.* 3rd ed. Paris, Librairie Dalloz, 1931.

† Manes, Alfred. Article, "Versicherung," in *Versicherungs-Lexikon,* page 1734.

INSURANCE IN GENERAL

(See Vol. I, Manes, *Allgemeine Versicherungswesen*, Chapter I; also Lindenbaum, in Zeitsch. f. Nationaloekonomie, Aug. 1, 1930, p. 75 for fundamental definitions, and Manes' "Begriff" in *Versicherungs-lexikon*).

A INSURANCES OF PROPERTY INTERESTS*		B INSURANCES OF PERSONAL CONTINGENCIES. INSURANCES ON LIVES			
(1) Corporeals:	(2) Other property interests—incorporeals:	(1) Death insurance (contingent death)	(2) Life insurance (contingent survival)	(3) Impairment of bodily functions	(4) Unemployment insurance
Transport insurances Fire insurance Hail insurance Animal insurances Burglary, theft and robbery insurance Fidelity insurance Riot and civil commotion insurances Water damage insurances Weather insurances Glass insurances Machinery insurances Property depreciation insurances Minor branches of property insurances (corporeals) Comprehensive, mixed-line insurances of corporeals	Liability insurances Exchange loss ins. Credit insurances Mortgage insurances Business interruption (u. & o., etc.) ins. Strike insurances Minor branches ——— Reinsurances	Payable at death of insured to designated beneficiary. Payable contingently to beneficiaries.	In general, endowment insurances and annuities.	Sickness insurances Maternity insurances Accident insurances Invalidity or disability insurances	

(NOTE: Manes does not mention birth and marriage insurances in this class. See Sumien, pp. 300 and 662, also article "Contingency Insurances" in Welson's *Dictionary of Accident Insurance*, London, Pitman, 1928, and in Stone and Cox, *Accident Insurance Yearbook*, 1930, p. 601. London.)

**See*: Chapter I, in *Treatise on the Law of Real Property*, by W. F. Walsh. New York. Baker-Voorhis, 1927.

Transport insurance in this present volume is divided under ocean marine, inland marine, lost article, baggage, jewelry and fur, mixed article, film, automobile and aircraft insurance. The fire insurance discussion is then presented in two sections—first, an historical chapter and second, a description of existing international practices. The hail and animal insurances, both governmental and private, are described in Chapter III. Then there follows treatment of indemnity of a third party against loss from the criminal acts of another (*deliktversicherung*) and this covers burglary, robbery, theft, fidelity, riot and civil commotion insurance, and includes sabotage insurance. Water risks are classed as water damage insurance, rain insurance, and flood insurance. The miscellaneous branches of insurance against loss of or damage to movables are discussed in Chapter VII, and here the author deals with glass insurances, storm insurance of several kinds, and machinery insurances (including steam boilers, electrical machinery, office machinery and miscellaneous machines).

The second broad division of Manes' book is devoted to insurances pertaining to the impairment or loss of, or damage to, incorporeal property interests. The many varieties of liability insurance are catalogued and described, and among the branches we note a discussion of compulsory automobile liability insurance, aircraft liability insurance, and freight and patent insurance. The credit insurances of many sorts are next in order. Here the author discusses conventional business credit risks, but in addition refers to several new mutations of this broad branch of cover: instalment credit, government bond guarantees, export credit, commercial loan, traveler's credit, mortgage guarantee and stock broker's guarantee insurance.

Business interruption and profits insurance is treated under four broad headings: rent, rental value and leasehold, use and occupancy or profits, strike, lockout and boycott, and stock exchange loss insurances.

Reinsurance is given a place in Manes' second broad class of insurances of incorporeal property interests, probably because it is primarily insurance for and of insurers and because, on some grounds, it may not be regarded as direct insurance of movable or immovable corporeals. Manes' concept of reinsurance should be compared with those of Ehrenberg, Kisch, Moldenhauer,

Sumien, Herrmannsdorfer and others who have dealt at some length with the philosophy of reinsurance.

A select bibliography of modern insurance treatises, drawn from the international literature, accompanies each chapter. It is hoped that an English translation of Manes' great text can be made.

E. W. KOPF.

Unfallversicherung (*Wirtschaft und Technik der Individualversicherung*). *Accident Insurance, Economics and Technique of Individual Insurance.* Erich Carus. E. S. Mittler and Son, Berlin, 1931. Pp. 135.

Dr. Carus has contributed a noteworthy text to the much neglected literature of personal or individual accident insurance. The last available text of similar character was that of Hiestand (1900), published in Switzerland. The author deals successively with: the scope and meaning of personal accident insurance, the history of this branch of the business, the statistical and actuarial basis, the administrative machinery, and with problems in medical inspection and certification, co-insurance and reinsurance, accounting, investments and taxation. The Carus text seems to be the best comprehensive treatment available today on personal accident insurance in its practical aspects.

It is published as the eighth volume in the "Insurance Library" Series of the German Society for Insurance Science, 31 Johannisberger Strasse, Berlin-Wilmersdorf, Germany.

E. W. KOPF.

Versicherungswirtschaftslehre (*Economics of Insurance*). F. Dörfel. Spaeth and Linde, Berlin and Vienna, 1931. Pp. 199.

Professor Dörfel's work is in reality a treatise on the general principles of insurance, with special emphasis on the economic aspects of private insurance. The introductory chapter is by far the best available and succinct summary this reviewer has seen of the vast European literature dealing with the scope and meaning of insurance. The six independent fundamental theories of insurance are discussed and an exceptionally clear explanation of the Gobbi-Manes "*bedarf*" or need theory is set forth. It has

not occurred to many American insurance men that much of the existent confusion as to the scope and methods of insurance supervision and as to rating theory in this country* would probably be reduced if there were plainly stated somewhere in the statute and case law affecting insurance, a basic definition of insurance as comprehensive as that established by Ulysses Gobbi, the Italian scholar, and spread over the world since 1905 through the teachings of Alfred Manes of Berlin. Even the Brosmith definition of 1927 fails to satisfy in the light of European discussions over the past forty years.

Dörfel proceeds to describe the major classes of insurance institutions, presents a brief history of insurance, and then sketches the development of insurance during the post-war period.

Two chapters then deal with the elements of insurance supervisory and contract law. Three chapters are devoted to the chief organization patterns of insurance carriers, their needs as to capital and surplus in relation to the types of risk covered, the mechanical forms of organization and the managerial layout.

The insurance contract is next analyzed under the conditions constituting commencement of risk, continuance and cessation of risk, premium calculations, contract drafting, and alterations in contract conditions. Modes of premium payment, insurance banking practice and reserve calculation are then taken up. Investment of insurance funds, the notification, adjustment and payment of losses, reinsurance, insurance accounting and auditing, and finally statistics and administrative control complete the remaining subjects in Dörfel's book.

The outstanding merit of this new text is its clarity and brevity. No essential insurance principle of economic significance seems to have been ignored. The bibliography is comprehensive and the literature down to 1930 appears to have been examined with thoroughness.

Dörfel is Professor at the Hochschule für Welthandel in Vienna and this book is a part of a series "Die Handelshochschule-Lehrbuch der Wirtschaftswissenschaften."

E. W. KOPF.

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* See Hobbs, Clarence W., *Report, Relative to the National Council on Compensation Insurance,* Part 2. National Convention of Insurance Commissioners, Hartford, Conn. Sept. 8, 1930.

The Support of the Aged: a review of conditions and proposals. The National Industrial Conference Board, Inc., New York, 1931. Pp. xi, 65.

It is a pleasure to meet such a sane, constructive pamphlet as this in the present-day welter of debate on old-age pensions. For brevity and clarity, for the manner in which it states and discusses the various questions to be faced and problems involved, this report can be strongly recommended to all readers, and especially to those lacking the time or the inclination to read the lengthier state reports which form its basis.

Old-age dependency is not identified with inability to earn one's living in old age. If conditions permit the saving of a competency, and avenues of thrift are open, then the individual can anticipate for himself his declining years. Failing this he will have children who possess a margin able to absorb the expense of his keep. This idea, which lies back of the whole report, is typically American and contrasts with the European idea that society should function as a unit, that the individual can control his own destiny only in so far as he cooperates with his fellows. The American viewpoint thus requires that a man should always work unless sick, and that he should save as an individual; in money, by investing in his family, or by cooperation with his employer. Poor relief should be granted to the aged sick and state old-age pensions granted only to the residue who are destitute and unable to find work. The National Industrial Conference Board's review attempts to discover how far such savings are possible, and have been possible, the extent of the poverty still remaining, and how the problems due to this poverty must be met.

An appendix tabulates the data on old-age pension and relief laws in the United States through 1930. How important the question is at the present time can be judged from the fact that to the twelve laws there listed a further five can be added for 1931. Pennsylvania has also just amended its constitution so as to make such a law possible. The need may be no more urgent now than ever it was, and all the clamor may be due to professional agitators, as is hinted in the introduction, but public interest is undoubtedly arising.

A second appendix gives a cross-section of employer-opinion,

and most of the reasons for and against state old-age pensions are presented. Nevertheless the Board expressly deny having reached any definite conclusions and put forth this "Review," which is a product of their Research Staff working under their Economic Council, to help understanding of the problem, preparatory to finding a solution.

W. H. BURLING.

Handbook of Insurance. Clyde J. Crobaugh. Prentice-Hall, Inc., New York, 1931. Pp. ix, 1413.

On the paper cover of the *Handbook of Insurance* one reads the following:—

"A Combination Dictionary and Encyclopedia of Insurance. . . . Contains a full explanation of the various terms used in insurance, in simple, non-technical language. Covers fire, life, casualty and other forms of insurance."

The use of the words "Dictionary and Encyclopedia" might lead one to assume that this work is a complete vocabulary of insurance terms and phrases. This, however, is not the case for, as the author states in his preface, "It would be manifestly impossible within the scope of a single volume covering all lines of insurance to present all the details". We find Mr. Crobaugh has endeavored to list the most important points in connection with each principal subject of insurance and provide for those not intending to be experts in any one line of insurance a means of obtaining fuller and more exact information than that held by average laymen on the general subject of insurance. The multiple-line insurance agent or broker, alias the producer, to whom the book is dedicated, will find this volume a handy work of reference and one of real value for answering the everyday questions which arise in a business which can so easily be misunderstood and in which the laymen can so readily be misled.

The author tells us that there are approximately 5,000 insurance "propositions" contained in the volume. We find these "propositions" written with care and clearness in simple language and in usable form, although the explanations are necessarily brief on account of the character of the work as stated above.

These explanations should not be taken as legal definitions, due to the fact that in many cases the decisions of the various state courts differ. The same is true of the Federal and foreign courts. We must remember that Mr. Crobaugh is describing solely the intent of the "propositions" and is not giving us a complete legal presentation.

Completeness or exactness of detail in a book of this kind on a subject where conditions are constantly changing can not be expected but the author has used every endeavor to bring his work up-to-date as shown by the treatment of the various forms of aviation insurance. In some instances the consideration given to important subjects seems to be too brief, as for example the subject of self- or partial self-insurance, which plays such an important part today in the insurance program of many of our industries. We might also mention the subject of loss prevention which the conscientious and thoughtful agent or broker should emphasize in considering the interest of his client, not only as it affects premium rates but as it relates to the interruption of business and to needless loss of life or property.

Because of the plan of the book, the various articles are not grouped under the principal forms of insurance, and therefore the work cannot be considered a textbook to be used by one who is a novice seeking knowledge in the study of the subject. This does not affect its usefulness, but the work should be approached as a handbook and not as a volume discussing completely the several branches of the business. It is, speaking exactly, a glossary of insurance terms, phrases, clauses and forms of coverage.

Clyde J. Crobaugh is well equipped to be the author of this work, having been director of the Educational Service of the Aetna Life and affiliated companies, also Chief of the Policyholders Service Bureau of the Insurance Department of the Chamber of Commerce of the United States and also Assistant Professor of Insurance in the School of Commerce and Finance of the University of Indiana. He is now connected with the Parker Corporation of Boston.

The *Handbook of Insurance* is without doubt a very valuable contribution to the books on insurance. In form and type it is a pioneer publication on this subject.

LESTER D. EGBERT.

Index-Key to the Texts of the Annual Reports of the Massachusetts Insurance Commissioners. Harriet Otis Boone. Published by the author, Boston, 1931. Pp. iii, 137.

The meat of this interesting publication is to be found in the first 55 pages, which contain a careful index of the Texts of the reports of the Massachusetts insurance department, commencing with 1855, and extending through 1930. Most of the items refer to reports previous to 1923 when the inclusion of extended texts was discontinued.

Following the index proper are two Supplemental Indexes, one to "subjects of special significance or discussed at length", the other to "opinions of the Massachusetts attorneys general and court decisions printed in whole or in part in the Annual Reports".

The remainder of the book (approximately half) is devoted principally to summary histories of the department, of fire insurance in Massachusetts, of life insurance in Massachusetts, and of the Massachusetts insurance statutes.

Miss Boone's work, based on a long connection with insurance in Massachusetts, should prove invaluable to anyone interested in the development of insurance, and particularly its supervision in the United States. Massachusetts was a pioneer in regulation, and its department has always been prominent in that field. Its courts and the outstanding personalities who have headed the insurance department have contributed to the theory and practice of insurance in an enduring fashion. This book enables one to locate readily the discussions pertinent to a multitude of important insurance topics.

The supplemental indexes and the historical sketches are of interest and afford a bird's-eye-view of insurance development in Massachusetts, but they present a certain duplication of information, and are of less value than the index proper.

Insurance men should be grateful to Miss Boone for her painstaking work, and should use it as a guide to one of the great sources of insurance thought.

RALPH H. BLANCHARD.

Reviews of the following books appear in *Transactions* of the Actuarial Society of America, Vol. XXXII, Part Two.*

An Elementary Treatise on Actuarial Mathematics. H. Freeman. Published for the Institute of Actuaries by the Cambridge University Press, 1931. Pp. 399.

The Institute of Actuaries' Textbook on Compound Interest and Annuities Certain. Ralph Todhunter. Third Edition, Revised and Enlarged by R. C. Simmonds and T. P. Thompson. Cambridge University Press, London, 1931.

Medical Impairment Study; Report of the Joint Committee on Mortality of the Association of Life Insurance Medical Directors and the Actuarial Society of America. New York, 1931. Pp. 172.

Japanese Experience Life Tables, 1912-1927. Department of Commerce and Industry, Japan, 1931. Pp. 344.

Unemployment Insurance in Great Britain. Mary B. Gilson. Industrial Relations Counselors, Inc., New York, 1931. Pp. 560.

Reviews of the following books appear in the *Record* of the American Institute of Actuaries, Vol. XX, Part II.*

The Institute of Actuaries' Text-book on Compound Interest and Annuities Certain. Ralph Todhunter. (Third Edition revised and enlarged by R. C. Simmonds and T. P. Thompson). Macmillan, New York, 1931. Pp. xvi, 262.

Unemployment Insurance in Switzerland. T. G. Spates and G. S. Rabinovitch. Industrial Relations Counselors, Inc., New York, 1931. Pp. xv, 276.

An Index-Key to the Texts of the Massachusetts Insurance Reports, with Supplementary Data. Harriet Otis Boone. Alpine Press, Inc., Boston, 1931. Pp. iii, 137.

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* Arrangements have been made with the Actuarial Society of America and the American Institute of Actuaries for exchange of book reviews. Reviews appearing in the *Transactions* or the *Record* may occasionally be reprinted in the *Proceedings* but it is believed that reference to the former publications will, in most cases, be sufficient.—Book Review Editor.

Japanese Experience Life Tables, 1912-1927. Department of Commerce and Industry, 1931. Pp. 324.

Occupational Diseases. Rosamond W. Goldberg. Columbia University Press, New York, 1931. Pp. 280.

Festgabe Moser. Stämpfli & Cie, Bern, 1931. Pp. 485.

Causes and Cures of Unemployment. Sir W. H. Beveridge. Longmans, Green and Co., New York, 1931. Pp. 70.

Medical Impairment Study—1929. Actuarial Society of America and the Association of Life Insurance Medical Directors, New York, 1931. Pp. vi, 172.

CURRENT NOTES

ARTHUR N. MATTHEWS, CURRENT NOTES EDITOR

Workmen's Compensation Emergency Rate Revision

For a number of years workmen's compensation insurance has shown an unfavorable experience. The present business depression has intensified this unfavorable experience. Declining wages and falling payrolls have reduced premium income without commensurate reduction in losses. The weekly compensation benefit, being based upon past earnings and being further influenced by the limits provided in the compensation laws, have been affected but slightly. Medical and hospital costs have continued to rise. The scarcity of work creates a natural tendency for the extent of the injury to be magnified and the period of disability to be prolonged.

These conditions became so serious that the condition of the compensation carriers seemed likely to be imperiled unless adequate relief were obtained. Accordingly, the National Council on Compensation Insurance, through a brief presented to the June meeting of the National Convention of Insurance Commissioners, directed the attention of the Commissioners to the serious emergency confronting the casualty carriers writing workmen's compensation insurance. The National Convention of Insurance Commissioners, by resolution adopted, recommended immediate action by all interested parties to the end that the situation due to the emergency be met.

Following this action, the Rates Committee of the National Council unanimously adopted on June 26, 1931, a countrywide program of emergency rate revisions. The program is as follows:

1. A varying rate increase by states determined by
   (a) The state indemnity loss ratio for policy year 1929, provided, however, that in states having less than $1,500,000 annual premium volume, the loss ratio shall be determined by the combined experience of policy years 1928-1929 or 1927-1928-1929, whichever is needed to secure a premium volume of approximately $1,500,000.

(b) The projection of the medical loss ratio on the basis of the state medical trend to the anticipated 1932 level.*

2. A uniform increase by states based on an emergency loading factor of 2.5 points which is the equivalent of a loading in rates of slightly less than 4.5 per cent.
3. The increase in each state to be filed to become effective September 1, 1931, regardless of the established annual revision date.

It was estimated that the emergency program, if universally approved, would result in approximately a 13 per cent. increase in countrywide rate level. The following table shows the results to date of the program:

Status of Emergency Revisions	Countrywide Effect
Approved	11.0%
Pending	0.9%
Disapproved	1.0%

NOTE: These countrywide figures include Pennsylvania and Delaware.

The approved emergency increase of 11 per cent. is in addition to an increase of 7 per cent. resulting from general rate revisions effective in 1931 prior to the adoption of the emergency program. It is evident from the foregoing percentages that the countrywide rate level has been increased approximately 19 per cent. (1.11 x 1.07) as a result of rate revisions approved to become effective on or after January 1, 1931. This does not include increases resulting from amendments to the compensation laws. If the pending emergency revisions are ultimately approved, a further increase of approximately 1 per cent. in countrywide level will result. In those states which did not allow the full emergency increase, a resubmission will be made in connection with the next general rate revision.

MASSACHUSETTS AUTOMOBILE PUBLIC LIABILITY RATES

On September 1, 1931, Commissioner of Insurance M. S. Brown issued a new schedule of rates for compulsory automobile insur-

* It should be borne in mind that the projection of medical beyond the indications of the latest experience in each state was incorporated as a part of the regular rate making procedure some six months prior to the adoption of the emergency program.

ance to become effective January 1, 1932. These rates represent an average increase of 11 per cent. as compared with the 1931 rates. At the public hearing on these rates there was so much opposition to the increases that Governor Ely of Massachusetts called a special session of the legislature for the purpose of considering a revision of the Massachusetts compulsory automobile insurance law.

The legislature was in session for a number of weeks during which time several bills were proposed as remedies for the situation. These bills provided for changes in the law such as:

Deductible coverage
Elimination of guest coverage
Establishment of a competitive state insurance company
Removal of commissions to agents
Substitution of a financial responsibility law

The legislature adjourned without changing the compulsory law.

Commissioner Dunham Addresses National Convention

Examinations of Insurance Companies was the subject of an address delivered at the sixty-second annual meeting of the National Convention of Insurance Commissioners by Howard P. Dunham, Insurance Commissioner of Connecticut. In this address, Mr. Dunham said that the purpose of the examination of insurance companies by state insurance departments was to discover any element which might be prejudicial to the interest of policyholders by reason of the inability of an insurance company to meet its obligations. He said there were 1,605 of these examinations made in the United States in 1930.

In speaking about the history of the examination of insurance companies, Mr. Dunham brought out the fact that prior to the establishment of state supervision, insurance companies were operating practically without mandatory safeguard as to financial ability and solvency, and that many failures resulted. "Some (of these failures)," Mr. Dunham said, "undoubtedly were due to inadequate knowledge or unwise financial practices and others due to deliberate and fraudulent actions. The need for competent supervision in order that those charged with the conserva-

tion of funds paid in by policyholders should so conduct the business to the end that all outstanding obligations might be met, was cared for by the creation of proper departments to care for the public interest in the business." Mr. Dunham remarked, however, that while the statutes give to the commissioner the right of regulation and supervision, it must be remembered "that with regulation obtruding itself into the place of management, the skillful operation of any branch of business which is affected with the public interest will in a great measure be removed." Mr. Dunham stated further in this connection, "The right to examine does not in my judgment mean that the department has power to compel the doing of whatever the Board of Directors or others charged with the management of the company in the exercise of sound discretion might or might not do, nor has the legislation undertaken to substitute the authority vested in the Insurance Department for the power given to the Board of Directors or to confer upon the Department any proper function of management vested in the Board of Directors. I believe the commissioners at no time should usurp the function of management of an insurance company."

Using the case of a lately defunct insurance company, Commissioner Dunham pointed out the necessity for a strict form of examination on the part of a state insurance department. In the report of a receiver for this particular company, it was shown that no capital stock had been paid in, bank accounts were overdrawn, mortgages were delinquent, records were unintelligible and erroneous, financing was questionable and there was a shortage of assets. "This report," the Commissioner said, "shows a gross negligence on the part of the state examining force in question and broadly speaking is a reflection on all insurance supervising officials of this country."

Commenting upon the cost to insurance companies for examination, Mr. Dunham said that he believed it unfair to require the companies to reimburse the state for costs of examination. The expense of these examinations, the Commissioner believes, should be borne by the states and thus needless and prolonged examinations would be avoided.

In outlining the procedure to be followed in the examination of insurance companies, Commissioner Dunham stated the follow-

ing as the main factors to be investigated: First, the management of the company; second, its accounting methods and procedure; third, the nature and quality of the company's ledger and non-ledger assets; fourth, the liabilities of the company, with a special emphasis on the necessity of the adequacy of unpaid claim reserves; and fifth, the company's treatment of its policyholders for the purpose of determining whether or not settlements are made in accordance with the terms of the policy and to determine whether or not the company is justified in resisting certain of its claims.

In concluding his address, Commissioner Dunham described the qualifications of state insurance examiners. In connection with this subject, Mr. Dunham said, "In the examiner I believe the qualities of patience, honesty and faithfulness indispensable, as they must be combined with shrewdness, resourcefulness and ability to get to the bottom of involved situations, together with unvarying courtesy and tact. To a large extent it is true that examiners are born and not made and while education and study are indispensable, they can never make a good examiner out of one who lacks the necessary fundamental talents."

As subjects for further consideration by the National Convention of Insurance Commissioners, Mr. Dunham mentioned the adoption of uniform accounting by all companies and also the adoption of a practical uniform blank for annual statements with unnecessary parts eliminated.

New German Insurance Law

Managers of both American and foreign insurance companies will be much interested in the just enacted German insurance law whereby the *Reichsaufsichtsamt* (German Federal Insurance Department) has had the reinsurance companies and other branches of insurance, hitherto not under supervision, brought fully within its authoritative jurisdiction. For many years some of the German reinsurance companies have purchased controls of other reinsurance companies, and in some cases those purchased companies have owned in their assets stocks of the parent company, which has resulted, in a number of cases, in several different insurance companies doing business on merely one capital.

This system of pyramiding resulted in chain systems of insurance companies, much resembling chain banks in this country, except that the banks each must have its own capital. There having been no supervision over the reinsurance companies as there was over the direct companies, this led in some cases to decided abuses. Since the Great War the financial situation in Germany has much affected the value of insurance stocks as a liquid asset. While the strong German reinsurance companies confined their purchases to reliable and carefully managed institutions, some of the others, managed by brokers on a commission basis, have been led into more venturesome channels.

Direct companies in Great Britain and Europe require almost invariably of reinsurance companies that the reserve for unearned premiums on their transactions be left with the direct company until it is earned, the latter paying a moderate rate of interest on this fund. In case of bankruptcies, as in the instance of the Frankfurter General Insurance Co., this asset cannot be gotten at by the other creditors, and the reinsurance company's stock held is not of great value, even if it is not entirely worthless. The German Federal Insurance Department, with the problems of a few of the German reinsurance companies in mind, has made the manager of the Frankona Reinsurance Co., Walter Schulz, a member of its insurance advisory council for a five-year term. Manager Schulz is a reinsurance mathematician and chairman of the United Berlin Insurance Mathematicians.

Swiss Actuarial Association

The Swiss Actuarial Association has issued its 1931 Proceedings. These contain Dr. Haldy's "Influence of variations in disability upon reserves"; Dr. Kobi's "Contributions to the knowledge and demonstration of increasing longevity in Switzerland"; Dr. Zwinggi's "Widows' insurance as a branch of general old age and orphans' insurance"; Dr. Riethmann's "Disability of Zurich teachers from 1898 to 1929"; Dr. Thalmann's "Values of Prym's Function in Annuity Valuation"; and notes on the scientific contributions of the Stockholm International Congress of Actuaries, 1930, by Drs. H. Renfer and S. Dumas.

Personal Notes

Gilbert E. Ault, formerly Associate Actuary with Woodward, Fondiller & Ryan in New York, is now Assistant Actuary of the Colonial Life Insurance Company in Jersey City.

W. Phillips Comstock, previously Executive Representative with the Continental Casualty Company, is now with the London Guarantee & Accident Company in New York.

Robert S. Hull, formerly Supervising Accountant with Woodward, Fondiller & Ryan in New York, is now with the Western & Southern Indemnity Company in Cincinnati.

Arthur Hunter is now Vice-President and Chief Actuary of the New York Life Insurance Company in New York.

William A. Hutcheson is now Vice-President and Actuary of the Mutual Life Insurance Company in New York.

James Morrison is now Resident Vice-President of the Independence Indemnity Company in New York.

Olive E. Outwater is now Actuary of the Benefit Association of Railway Employees in Chicago.

Dudley M. Pruitt is now Actuary and Assistant Treasurer of the Pennsylvania Indemnity Corporation in Philadelphia.

Louis Buffler has left the Employers Mutual Insurance Company and is District Manager of the Utica Mutual Insurance Company in New York.

William J. Constable is now Resident Secretary of the Lumbermen's Mutual Casualty Company in Boston.

Morris Pike has left the Unity Life & Accident Insurance Association and is Vice-President and Actuary of the Union Labor Life Insurance Company in Washington.

Rainard B. Robbins has left the Union Labor Life Insurance Company and is now Secretary and Actuary for Annuities of the Teachers Insurance and Annuity Association of America in New York.

Exequiel S. Sevilla is now Actuary in the office of the Insurance Commissioner in Manila.

Walter I. Wells, formerly with Woodward, Fondiller & Ryan in New York, is now with the Massachusetts Protective Association in Worcester.

LEGAL NOTES

BY

SAUL B. ACKERMAN

(OF THE NEW YORK BAR)

ACCIDENT

The insured under an accident policy, died as a result of injuries received when his automobile ran into a stone pillar at a street intersection. The policy insured against death effected by the wrecking of an automobile. The insurer denied liability because the car was not totally destroyed. Is the total demolition of the car a prerequisite to recovery?

The court held in the negative, saying:

"To constitute a 'wrecking' within the meaning of the policy, it is not necessary that the car be totally destroyed or rendered entirely incapable of use. In ordinary speech an article is said to have been wrecked when it is disabled or seriously damaged although it may not be totally destroyed or rendered incapable of use. A common use of the verb 'to wreck' is to destroy, disable, or seriously damage. The evidence agreed to shows that the car was disabled, and in part, at least, was seriously damaged. * * * In our opinion the evidence shows that the front part of the car at least was wrecked, that there was a wrecking of the car; and that the plaintiff's injuries resulted 'directly to or in consequence of the wrecking of said car,' within the terms of the policy. It is true that in the present case there was no testimony of any eyewitness to the accident, and there was no direct evidence to show the condition of the automobile after the accident; but we believe that the uncontradicted evidence introduced showing the position of the car and of the deceased immediately after the accident, the skid marks, the noise made by the crash, the displacing of the large stone pillar, and the towing of the car from the scene of the accident, all leads to but one rational conclusion, to wit, that the injuries were incurred by the 'wrecking' of the car."

[Uohmer *vs.* Sierra Nevada Life & Casualty Co. 299 P. 749.]

AUTOMOBILE

A policy of collision insurance had been cancelled, and thereafter an accident occurred which the policy would have covered

had it been in force. After the accident an agent of the insurance company stated to the insured that the policy was still in force. Does this operate as a revival of the policy?

The court held in the negative, and said:

"The plaintiffs contend that after the collision they had a conversation with Mr. Doherty in his office, at which time the agent, Beshlian, who issued the policy, was also present, and that Doherty told Beshlian that the policy was still in force. Doherty, however, testified that he made no such statement, and that he had no authority to reinstate the policy when the premium had remained unpaid for more than sixty days. The statement of Doherty, if made, is not material in relation to the obligation of the defendant company, as the policy had been cancelled and the cancellation was the exercise of a power reserved in the policy. The language of the policy is as follows: 'This policy may be cancelled at any time by either of the parties upon written notice to the other party, stating when thereafter cancellation shall be effective and the date of cancellation shall then be the end of the policy period.' The policy further provided that: 'Notice of cancellation in writing, mailed to or delivered to the address of the Assured as given herein, shall be a sufficient notice from the Company.' Under the circumstances the statement of Doherty that the policy was in force, if he made such statement, was absolutely untrue, as nothing had been done to reinstate the policy after the last notice of cancellation. Any statements which Doherty made after the accident had occurred would not operate at that time as a revival of the policy."

[Pearson *vs.* General Casualty & Surety Co. 154 A. 739.]

Burglary

The assured, an attorney, received from his broker a burglary policy to cover the contents of his safe. In the safe was an oil painting, the property of one of assured's clients. Later the broker sent the assured a rider to the policy limiting coverage to securities only. The assured did not read the rider. Does the policy cover the loss of the painting?

The court declared it did not, saying:

"The assured was an attorney at law. The coverage was for 'merchandise usual to the assured's business', and we think it can be seriously questioned whether an oil painting two centuries and a half old, the work of one of the world's greatest

masters, can be said to be merchandise usual to the business of a lawyer.

"In the second place, the alteration of the policy by the rider, so as to make it cover securities instead of merchandise, must be held to have been made with the assent of Beardslee. His broker, while engaged in procuring the kind of insurance he desired, knew of the change, and communicated that knowledge to him by the most effective means possible; that is, by writing to him and by delivering to him the document whereby the change was effected. Beardslee cannot now be heard to say, as against the insurer, that he did not know or appreciate the effect of the alteration of the policy, or that he did not assent to the alteration."

[Abelson *vs.* Fidelity & Casualty Co. 2 P. (2d) 272.]

COMPENSATION

A workmen's compensation policy was issued on March 9, 1928, but on its face it purports to be in force from February 9, 1928. An employee was injured on March 7, 1928, and the insurer claims it is not liable because the earlier date was placed on the policy through inadvertence. If the insurer discovered its mistake and did not forthwith cancel the policy, is it liable?

The court held the insurer liable, saying:

"If the term of the coverage was mutually agreed on, and there was a scrivener's mistake as to the term of the policy, due to mutual inadvertence, such as the failure to read the policy and note the error after the minds of the parties had met, the equitable defense may be interposed by the insurance company. If no term was mutually agreed on and the insurance company made a unilateral mistake, it should have cancelled its policy, as provided in section 54, when it discovered that fact. Otherwise, in the absence of fraud, the contract as written and delivered must be deemed to be the contract of the parties. These are questions within the wide scope of the powers intrusted to the Industrial Board for its determination.

"Such matters should be disposed of summarily before one tribunal so that prompt adjustment of liability for industrial accidents may be obtained without unnecessary litigation and expense. Here we have an accident which happened more than three years ago with the question of liability still unsettled. Such delays are inconsistent with the purpose of the remedies provided by the Compensation Law."

[Royal Indemnity Co. *vs.* Heller. 176 N. E. 410.]

Fidelity

A fidelity bond purported to indemnify a bank against loss sustained by fraud or dishonesty of any employee, amounting to larceny or embezzlement, with a provision that loss should be discovered during such term or within six months thereafter. The bank failed to discover a loss within the term of the bond or six months thereafter. Is the provision valid?

The court decided in the affirmative, saying:

"It cannot be contended that such a limitation is obnoxious to the law of contracts; the limitation of an insurer's liability upon a fidelity bond to losses sustained and discovered within a stipulated period has been recognized and enforced in scores of instances.

"* * * It is well settled that where the liability of the insurer is expressly limited in an indemnity or fidelity contract to losses discovered within a specified time, there is no liability unless the fraud, dishonesty or negligence causing the loss not only occurs but is discovered within the time limit, and the mere fact that the discovery of a fraud during that period is prevented by the concealment thereof by the defaulter will not extend the period of indemnity. The insured is bound to discover the loss during the prescribed period, and if he fails to do so, the insurance company is not liable.

"The effect of such a provision in a bond is helpful rather than hurtful. Knowing that no recovery can be had for losses not discovered within the time fixed by the bond, the bond itself is an incentive to the officers of the bank to do their duty by making frequent and careful examinations of the accounts of its employees. Similar provisions to the one in question have been upheld by the courts; and it is well settled that, where the liability of the insurer is limited to losses discovered within a specified time, there is no liability, unless the fraud, dishonesty, or negligence causing the loss not only occurred, but was discovered, within the time limit."

[Chicora Bank *vs.* United States F. & G. Co. 159 S. E. 454.]

Public Liability

A public liability policy required that notice of accident be given "immediately". What is the construction of this clause?

The court held that the provision is complied with if notice is

given within a reasonable time under the circumstances of the particular case, saying:

"Where the serious results of an accident do not make themselves apparent until some time after the accident, such fact may be taken into account as tending to excuse the delay in giving notice.

"A requirement for notice or proof of death immediately or forthwith or at once will not be literally construed, but it is sufficient if the required documents are furnished within a reasonable time under the circumstances of each particular case.

"It is set out that, where no bodily injury is apparent as the result of an accident when it occurs, and there is no reasonable ground to believe a claim for damages will arise therefrom, one is not required to give notice until subsequent facts as to an injury would suggest to a person of ordinary and reasonable prudence that a liability on the part of the owner to the injured person might arise.

"A requirement in a public liability insurance policy that notice of an accident shall be given immediately or forthwith or at once will not be literally construed; but it is sufficient if the required notice be given within a reasonable time under the circumstances of each particular case."

[George *vs.* Aetna Casualty & Surety Co. 238 N. W. 36.]

OBITUARY

ALFRED BURNETT DAWSON

1882 - 1931

It is always with a feeling of loss that we record the death of one of our Fellows, and the late Alfred B. Dawson was one of the charter members of the Society, associated with us since our organization in November, 1914.

He was born in De Soto, Wisconsin, on August 3, 1882, and came to New York with his family in 1895 where he received his later education. He entered his father's office in 1902 and four years later he became editor of *The Chronicle* which he conducted until 1910, when he became a partner with his distinguished father in the firm of consulting actuaries, Miles M. Dawson and Son. When the firm was incorporated on January 1, 1930, he was elected its first president.

Among Mr. Dawson's early activities were his services along with his father in the Armstrong and in the Canadian investigations. In his later career he had charge of many important inquiries for various state departments.

Although he did not contribute to the *Proceedings* of the Society, he took an intelligent interest in the progress of insurance in its many branches, and in the work being done to bring about better conditions. He made many friends through his genial and kindly manner and broad views of life. He was a business man rather than a scientist, and believed that more could be accomplished by personal contacts than by written communications. His untimely death on June 21, 1931, in his forty-ninth year, caused sorrow to his many friends and associates.

LEE K. FRANKEL

1867 - 1931

Dr. Lee K. Frankel, a Fellow of this Society since 1916, died suddenly in Paris on July 25th. He was born in Philadelphia on August 13, 1867, the son of Louis and Aurelia (Lobenburg)

Frankel. After completing his undergraduate work at the University of Pennsylvania in 1887, Dr. Frankel undertook graduate studies in chemistry, receiving his Doctor's degree in 1891. He was instructor in chemistry at the University of Pennsylvania from 1888 to 1893; then practiced as consulting chemist until 1899. His first contact with public health work occurred in 1885, when he assisted Dr. Henry Leffmann in studying a typhoid fever epidemic in Plymouth, Pennsylvania. Dr. Frankel first became interested in social work in 1894, and, largely through the influence of the late Professor Morris Loeb, entered organized philanthropy. From 1899 to 1908, he served as Manager of the United Hebrew Charities in New York City.

He first became technically concerned with life, health and accident insurance as an agency for social welfare about 1906. Social insurance had always interested him. Through Dr. Alfred Manes, of Berlin, he was attracted to the conservation aspects of insurance and to health promotion as an adjunct of personal insurance institutions. He saw clearly that insurance institutions, adapted to the scene in which they worked, could do much to set in motion forces for the mitigation of risk. After his service with Mr. Miles M. Dawson for the Russell Sage Foundation in surveying workingmen's insurance in Europe (1908-1909), Dr. Frankel became connected with the Metropolitan Life Insurance Company, and until his death, directed the health promotion and welfare work of that company. His service in organizing the visiting nursing system, the health educational, public health and social welfare work of that company attracted world-wide attention. His pioneering efforts in advancing life and other insurance practices were not, however, so widely known. He and the late George Badger Woodward were, for instance, largely instrumental in initiating the group insurance program of the Metropolitan and Dr. Frankel organized its group policyholders' service bureau. Dr. Frankel had brought with his survey materials on social insurance in 1909 a description of European practices since 1865 in the field of collective insurance. The present health and accident insurance department of the Metropolitan grew out of his steady advocacy of the principle that life insurance, *per se,* was only one of the branches of personal insurance which should be cultivated by companies authorized to transact

"insurance on lives." He was furthermore instrumental in organizing studies of funeral costs, of family insurance budgeting, in directing impartial and honestly critical studies of proposed social insurance plans in the United States, in planning factual studies of costs of sickness and injury as a foundation for broader family insurance covers, in drafting and administering educational work for agents of his company, and in uniting the business of life insurance with legislative and administrative branches of government dealing with health and welfare functions.

At the time of his death, Dr. Frankel was engaged in a resurvey of social insurance in European countries. Fortunately, the major portion of the field work in the survey had been completed before his death.

While Dr. Frankel was not active in the affairs of the Society, he nevertheless was intensely interested in its work of developing technical standards in workmen's compensation and other casualty lines. It is not generally known that Dr. Frankel played an important part in the preliminary discussion of employers' liability insurance, in its relation to industrial injuries and crippling, which discussion later led to the enactment of workmen's compensation statutes in the United States.

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Walter E. Otto
Donald M. Overholser
Richard M. Pennock
J. H. Phillips
Samuel C. Pickett
Morris Pike
John W. Piper
Kenneth B. Piper
William A. Poissant
William F. Poorman
John M. Powell
Myron R. Prenner
Joseph Raywid
Harry F. Richardson
Rainard B. Robbins
Harry M. Sarason
Arthur Sawyer

ASSOCIATES—CONTINUED

EXEQUIEL S. SEVILLA
NORRIS E. SHEPPARD
JOHN L. SIBLEY
ROBERT V. SINNOTT
JACK J. SMICK
ARTHUR G. SMITH
WILLIAM F. SOMERVILLE
ARMAND SOMMER
ALEXANDER A. SPEERS
HAROLD S. SPENCER
HERBERT P. STELLWAGEN
KENDRICK STOKE
WALTER F. SULLIVAN
JOHN J. TAHENY
ARTHUR E. THOMPSON
FREDERICK H. TRENCH
M. ELIZABETH UHL
WALTER G. VOOGT
HARRY V. WAITE
CHARLES S. WARREN
JAMES H. WASHBURN
LELAND L. WATERS
J. J. WATSON
EUGENE R. WELCH
ALEXANDER C. WELLMAN
WALTER I. WELLS
CHARLES A. WHEELER
FRANK G. WHITBREAD
JOHN F. WILLIAMS
WILLIAM R. WILLIAMSON
DONALD M. WOOD
MILTON J. WOOD
CHARLES E. WOODMAN
JAMES WOOLERY
FLOYD E. YOUNG

ABSTRACT FROM THE MINUTES OF THE EIGHTEENTH ANNUAL MEETING

NOVEMBER 13, 1931

The eighteenth annual (thirty-seventh regular) meeting of the Casualty Actuarial Society was held at the Hotel Biltmore, New York, on Friday, November 13, 1931.

President Tarbell called the meeting to order at 9:40 A. M. The roll was called showing the following fifty-one Fellows and seventeen Associates present:

FELLOWS

AINLEY	GRAHAM, C. M.	MOORE, G. D.
BARBER	GRAHAM, T. B.	MULLANEY
BLANCHARD	GRAHAM, W. J.	ORR
BREIBY	GREENE	PERKINS
BUCK	HARDY	PERRYMAN
CAHILL	HAUGH	PRUITT
CARLSON	HOBBS	RICHTER
CORCORAN	HULL	ROEBER
CRAIG	JACKSON, C. W.	SENIOR
DAVIS, E. M.	KOPF	SILVERMAN
DORWEILER	LAMONT	SKELDING
DUNLAP	LAWRENCE	SKILLINGS
FLYNN	LINDER	SMITH, C. G.
FONDILLER	MARSHALL	TARBELL
FREDRICKSON	MAYCRINK	VAN TUYL
GINSBURGH	MCMANUS	WHEELER, R. A.
GODDARD	MICHELBACHER	WHITNEY

ASSOCIATES

CAMERON	HALL, H. L.	SIBLEY
CONSTABLE	HIPP	SMICK
EDWARDS	JONES, L. D.	SMITH, A. G.
FITZGERALD	KORMES	SOMMER
GIBSON	OBERHAUS	WARREN, C. S.
GILDEA	PICKETT	

Mr. Tarbell read his presidential address.

The minutes of the meeting held May 15, 1931, were approved as printed in the *Proceedings*.

The Secretary-Treasurer read the report of the Council and upon motion it was adopted by the Society. With respect to the 1931 examinations, the results were as follows:

The following Associates had passed the necessary examinations and had been admitted as Fellows:

GILBERT E. AULT
ELGIN R. BATHO
RUSSELL P. GODDARD
D. M. PRUITT
DAVID SILVERMAN
HERBERT E. WITTICK

The following candidates had passed the necessary examinations and have been enrolled as Associates:

CHARLES H. BURHANS
FREELAND R. CAMERON
JOHN EDWARDS
MORRIE L. GARWOOD
DANIEL J. LYONS
HAROLD E. MACKEEN
HENRY C. MILLER
THOMAS M. OBERHAUS
SAMUEL C. PICKETT

The following candidates had been successful in completing examinations for Associate but have not yet been enrolled by reason of the terms of Examination Rule 4:

CHARLES R. ARTHUR
RICHARD A. GETMAN
CHARLES B. LAING
BARNET LEWIS
HAROLD P. H. MOORE
JAMES A. ROBERTS
ARTHUR G. ROBERTSON
ROBERT G. WARD
JOHN F. WILSON

Diplomas were then presented by the President to Gilbert E. Ault, Elgin R. Batho, Russell P. Goddard, D. M. Pruitt, David Silverman and Herbert E. Wittick, who had been admitted as Fellows under the 1931 examinations.

The President announced the deaths since the last meeting of the Society of two Fellows, Alfred B. Dawson and Lee K. Frankel, and the memorial notices appearing in this Number were thereupon read.

The Council selected Stewart M. LaMont, Third Vice-President, Metropolitan Life Insurance Company, New York, and recommended that he be admitted as a Fellow without examination under the terms of Article III of the Constitution. After balloting this nominee was declared a duly elected Fellow.

The reports of the Secretary-Treasurer (Richard Fondiller)

and of the Librarian (William Breiby) were read and accepted. The annual report of finances follows:

ANNUAL REPORT OF FINANCES

Cash receipts and disbursements from October 1, 1930 to September 30, 1931

INCOME

On deposit on October 1, 1930 in Fidelity Trust Company		$ 384.84
Members' Dues	$2,585.00	
Sale of Proceedings	1,518.30	
Examination Fees	380.00	
Luncheons	302.50	
Casualty Insurance Accounting	10.00	
Interest on Bonds	30.63	4,826.43
Total		$5,211.27

DISBURSEMENTS

Printing and Stationery	$2,910.34
Postage, Telegrams and Express	196.18
Secretarial Work	360.00
Library Fund	23.64
Casualty Insurance Accounting	280.00
Luncheons	339.60
Examination Expense	210.04
Miscellaneous	146.69
Total	$4,466.49
On deposit on September 30, 1931 in Marine & Midland Trust Co.	744.78
Total	$5,211.27

Income	$4,826.43	
Disbursements	4,466.49	
Profit	359.94	
1930 Bank Balance	384.84	
1931 Bank Balance		$ 744.78

ASSETS

Cash in Bank		$ 744.78
Investments	1,000.00	
Total		$1,744.78

The Auditing Committee (W. M. Corcoran, Chairman) reported that the books of the Secretary-Treasurer had been audited and his accounts verified.

The report of the Educational Committee (E. W. Kopf, Chairman) was read and accepted.

The Examination Committee (Charles J. Haugh, Chairman) submitted a report of which the following is a summary:

1931 EXAMINATIONS—SUCCESSFUL CANDIDATES

The following is a list of those who passed the examinations held by the Society on May 27th and 28th, 1931:

ASSOCIATESHIP—PART I

Freeland R. Cameron
Joseph H. Forest
Richard A. Getman
Barnet Lewis
Harold P. H. Moore
Thomas M. Oberhaus
James A. Roberts
Arthur G. Robertson
John F. Wilson
Hubert W. Yount

ASSOCIATESHIP—PART II

Charles R. Arthur
Arthur L. Bolton
Charles H. Burhans
Richard A. Getman
Clifford T. Godfrey
Charles B. Laing
Barnet Lewis
Harold P. H. Moore
Thomas M. Oberhaus
James A. Roberts
Arthur G. Robertson
Robert G. Ward
John F. Wilson

FELLOWSHIP—PART I

John Edwards
Morrie L. Garwood
Russell P. Goddard
Daniel J. Lyons
Harold E. MacKeen
Henry C. Miller
Samuel C. Pickett
D. M. Pruitt
Walter I. Wells

FELLOWSHIP—PART II

Gilbert E. Ault
Elgin R. Batho
Russell P. Goddard
D. M. Pruitt
David Silverman
H. E. Wittick

The report of the Committee on Remarriage Table, (W. F. Roeber, Chairman) was read and accepted.

The Council's reëlection of Robert J. McManus, Editor, and William Breiby, Librarian, subject to confirmation by the Society, was announced.

The annual elections were then held and the following officers and members of the Council were declared elected:

President	THOMAS F. TARBELL
Vice-President	ROY A. WHEELER
Vice-President	WINFIELD W. GREENE
Secretary-Treasurer	RICHARD FONDILLER
Editor	ROBERT J. MCMANUS
Librarian	WILLIAM BREIBY

Members of Council (Terms expire in 1934):

CHARLES J. HAUGH RALPH H. BLANCHARD
G. F. MICHELBACHER

The new papers printed in this Number were read or presented. The papers read at the last meeting of the Society were discussed.

Recess was taken for lunch at the Hotel until 2:15 P. M.

The following topic for which speakers had been selected was then discussed:

Unemployment Insurance

(a) Would it mitigate technological unemployment?

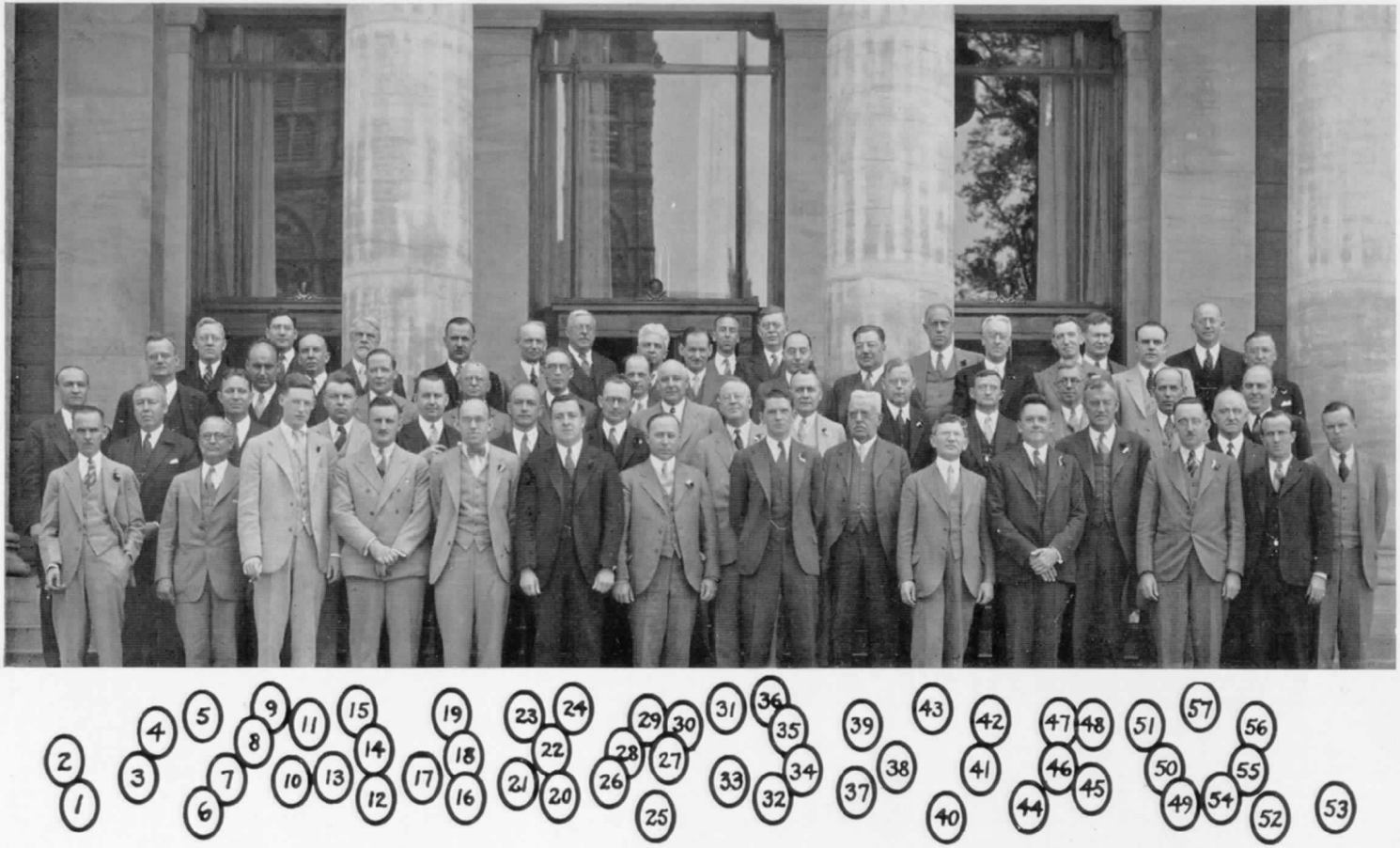
(b) Could it be made to take up the slack caused by uneven distribution of "barter power"?

(c) To what extent may the experience of foreign countries be used as a guide in the United States?

(d) Is compulsory unemployment insurance practical? If so, how should it be administered?

Mr. James D. Craig, Ex-President of this Society, addressed the members on "Some Observations on Social Insurance" particularly in the light of his recent study of the subject in Europe.

Upon motion the meeting adjourned at 5:10 P. M.



CASUALTY ACTUARIAL SOCIETY—MAY 20, 1932 MEETING AT HARTFORD, CONN.

PHOTOGRAPH OF THE MEMBERS — MAY 20, 1932 MEETING AT HARTFORD

The photograph shown on the preceding page was taken during the luncheon recess at the Aetna Life Insurance Company's building in Hartford, Connecticut, on May 20, 1932.

Reference to the diagram and the following lists will identify the members included in the picture.

Number	
1	WAITE, H. V.
2	DORWEILER
3	FLYNN
4	HART
5	GILDEA
6	MOORE, G. D.
7	BLANCHARD
8	SINNOTT
9	MILLS
10	CAHILL
11	GARRISON
12	PERRYMAN
13	MATTHEWS
14	AINLEY
15	HARDY
16	GLENN
17	CORCORAN
18	DUNLAP
19	PICKETT
20	WOOD, M. J.
21	WHEELER, R. A.
22	SENIOR
23	HUNT
24	HOBBS
25	HALL, H. L.
26	POWELL
27	GARWOOD
28	HAUGH
29	FITGERALD
30	MARSHALL
31	WAITE, A. W.
32	GODDARD
33	COGSWELL
34	COMSTOCK
35	GINSBURGH
36	ELSTON
37	COWLES
38	FURNIVALL
39	CONSTABLE
40	FONDILLER
41	KELTON
42	LAWRENCE
43	HARRIS
44	TARBELL
45	LAIRD
46	SPENCER
47	MONTGOMERY, J. C.
48	VALERIUS
49	NEWHALL
50	FALLOW
51	MASTERSON
52	POISSANT
53	MacKEEN
54	SCHEITLIN
55	GREENE
56	McMANUS
57	BARBER

	Number
AINLEY	14
BARBER	57
BLANCHARD	7
CAHILL	10
COGSWELL	33
COMSTOCK	34
CONSTABLE	39
COCORAN	17
COWLES	37
DORWEILER	2
DUNLAP	18
ELSTON	36
FALLOW	50
FITZGERALD	29
FLYNN	3
FONDILLER	40
FURNIVALL	38
GARRISON	11
GARWOOD	27
GILDEA	5
GINSBURGH	35
GLENN	16
GODDARD	32
GREENE	55
HALL, H. L.	25
HARDY	15
HARRIS	43
HART	4
HAUGH	28
HOBBS	24
HUNT	23
KELTON	41
LAIRD	45
LAWRENCE	42
MacKEEN	53
MARSHALL	30
MASTERSON	51
MATTHEWS	13
McMANUS	56
MILLS	9
MONTGOMERY, J. C.	47
MOORE, G. D.	6
NEWHALL	49
PERRYMAN	12
PICKETT	19
POISSANT	52
POWELL	26
SCHEITLIN	54
SENIOR	22
SINNOTT	8
SPENCER	46
TARBELL	44
VALERIUS	48
WAITE, A. W.	31
WAITE, H. V.	1
WHEELER, R. A.	21
WOOD, M. J.	20

VOL. XVIII, PART II NO. 38

PROCEEDINGS

MAY 20, 1932

BUSINESS CYCLES AND CASUALTY INSURANCE

PRESIDENTIAL ADDRESS, THOMAS F. TARBELL

Business cycles, as we have been constantly reminded, are natural phenomena inherent in our economic system and industrial development. The cycles may be represented by graphs or curves not sufficiently characteristic to be expressed by any specific mathematical equation but possessing more or less clearly defined maximum and minimum values—prosperity or inflation and depression or deflation. The economic deflation, which started in the latter part of 1929, stands out as the most severe in the annals of this country. While possibly some economists will disagree with this statement, probably none will dispute the fact that it provides as good an example as we need for studying causes and effects and charting future courses.

Like practically every other business or industry, casualty insurance is affected by the varying phases of the business cycle. While the minimum value—depression or deflation—is in the minds of most of us at the present time, it is important that all phases be kept in mind if we are to locate correctly our position at any particular time and, profiting by the experience of the past, so direct our efforts that we shall anticipate and prepare for the unwelcome but unavoidable period of deflation which experience indicates will eventually follow inflation. Practically all features of the casualty insurance business are more or less correlated with or affected by the general business cycle. It is proposed to consider some of the more important features.

An insurance company from the nature of its business accumulates funds or assets from its policyholders not required for immediate disbursement but which are held to meet both losses and expenses to be paid out in the future. There is both a legal and a moral obligation on the insurance company to pursue an invest-

ment policy sufficiently conservative to reasonably assure that the funds held for the benefit of policyholders or other claimants will be available when required. The laws of certain states impose some measure of control over the investments of casualty insurance companies but such control is not an important factor in shaping investment policies, since prescribed investments usually apply only to minimum capital requirements. Prohibited types of investments are inconsequential. Accordingly, the investing of a very large proportion of the assets of a casualty insurance company is within the discretion of the company.

Recent experience has clearly demonstrated that the so-called investment profit concerning which we heard so much in past years is a will-o'-the-wisp and that companies which have followed a conservative investment policy have suffered less depreciation in security values than those which have attempted to augment earnings or offset underwriting losses by investment profits. The futility of such a policy has been clearly demonstrated by the events of the past few years. In fact, it may be seriously questioned if an insurance company with a growing volume of business requiring it necessarily to make investments at various stages of the business cycle can hope to obtain more than a reasonable interest return upon its invested assets.

Companies pursuing conservative investment policies and owning excellent securities recently have seen the values of such securities shrink to unreasonably low figures. While the majority of state supervising officials have recognized that stock market values materially discounted true or asset values and permitted the use of values in the annual statements as of December 31, 1931, somewhat higher than actual market quotations, the action was by no means unanimous and the desirability of some definite method of valuation designed to reflect asset values and minimize surplus fluctuations due to abnormally high or abnormally low market quotations is obvious. Regardless of valuation methods, however, it is well to emphasize the point that a conservative investment policy is one having as its primary object the conservation rather than the augmentation of assets. If such a policy is followed, future deflations should find insurance companies better prepared in general to withstand such financial shocks as they have been exposed to during the past two years.

The present general rule (in some cases the law) respecting

the valuation of securities of casualty insurance companies in preparing annual statements is the use of so-called market values. Accordingly, investment profits as shown in the annual statements and as reflected in surplus contain not only profits actually realized by sale but unrealized or paper profits. The latter, so long as they are unrealized, are not true profits but, rather, potential profits.

Regardless of conservatism in investment policy, a company will usually develop some, if not considerable, paper profits during a period of inflation. If it be admitted that these are potential or contingent profits, then consistent policy should demand the setting up of corresponding reserves, properly ear-marked, to offset the inflation of assets from this source.

Various suggestions have been made during recent months looking to an improved method of valuation of insurance company securities which will tend to produce financial stability. One suggestion is that securities should be valued at cost regardless of market quotations. This appears at first glance to possess considerable merit but upon close examination does not appear feasible, as can be readily demonstrated. If such a rule were in effect, there would be too great an incentive for companies to turn over securities as they developed profits, with the result that at the end of the inflation period they would be holding securities acquired at maximum, or nearly maximum, inflated values, and it could scarcely be successfully contended that such prices reflected fair asset values. It is quite conceivable that such cost prices would not be attained again for many years.

The problem of what constitutes the asset value of a security should, of course, be approached from the standpoint of determining that value which reflects normal worth, taking into consideration all factors having a bearing upon the problem. Along these lines the suggestion has been made that the privilege of valuing bonds on the amortized basis be generally extended by statute to casualty companies. This method is generally permitted by statute to life companies and has been sanctioned by statute in Connecticut for casualty (and fire) companies since 1919. In the case of preferred stocks it has been suggested that normal value might be represented by a valuation method which, subject to certain qualifications, would determine the value on the basis of a normal rate of interest return for that class of

security. While these suggestions probably contain some merit, to date no worth-while improved method of valuing common stocks has been advanced and it is probably safe to assume that no radical departures from valuation of securities of casualty companies on market quotations are in immediate prospect.

As heretofore indicated, one of the fallacies which has been pretty well exploded during the past two years is that casualty companies can stand a reasonable underwriting loss because of their substantial investment profits. It is more than ever apparent that the underwriting feature of the business must stand on its own feet and that investment profits, if any, and interest on reserves have no place in the rate structure other than that of a possible factor of safety.

The current deflation has served to focus the spotlight on the problem of rate levels, particularly for the compensation line. The unfortunate underwriting history of this line during the past ten years is so well known as to require no details or supporting statistics. The experience of the more recent calendar years and the prospective experience for the current year clearly demonstate that if the rate level is such that companies cannot make a profit in prosperous years they cannot hope to avoid a substantial loss in lean years.

The past underwriting history of the compensation line suggests the futility of attempting to make rate levels exactly conform to the estimated current loss costs and indicates that it might be more advantageous in general to determine rate levels from the long term point of view. So long as payroll is used as the unit of exposure, the loss ratio is bound to vary with industrial activity and wage levels, since in times of expansion and rising wages losses, because of the operation of the maximum indemnity limit and the penalty attached to malingering, do not increase at as great a rate as premiums. Conversely, in a period of decreased industrial activity and falling wages, losses do not decrease at as great a rate as premiums. A rate level which could be kept on a more or less even keel, varying, of course, to reflect changes in benefits, waiting period and any clearly indicated general trend, should work out satisfactorily to both interested parties—companies and assured. The advantages to the companies are obvious. In the case of the assured, it would overcome the necessity of confronting him with a substantial rate

increase during the trying periods of depression. This was the case last year when it was absolutely necessary for the companies to obtain emergency rate increases and, incidentally, from all present indications it will be just as necessary that similar increases be obtained this year.

The establishing of rate levels on the long term principle would impose a moral obligation upon companies to conserve a portion of the profits acquired during business inflation in anticipation of losses during a period of deflation. Sound business judgment, also, should dictate the necessity of such a course.

The foregoing is, of course, in a sense theoretical or academic, since it presupposes that those state officials vested with authority to establish or approve rates would admit the principle and act accordingly. It is to be hoped that recent past experience will serve to emphasize the necessity of giving proper consideration and weight to the legitimate needs of the companies for reasonable and adequate rate levels. Unless this result can be obtained, the outlook for the compensation line for private insurance carriers is dismal and it may ultimately be necessary to abandon the line.

While the major problem of compensation insurance today, as it has been for many years, is adequate rate levels, there are other problems or features where past experience should influence us to pause and consider. We should continue to strive for an improved basis of exposure. We should consider if the present refinements of classifications are essential. We should apply the acid test to our merit rating plans for differentiating in rate between risks of the same classification. We should carefully study the problem of the basis of determination of rate levels. While Schedule Z experience is satisfactory for establishing differentials between classifications, the lag in the experience makes it unsuitable for rate level purposes unless modified to reflect trend. While considerable progress has been made in modifying medical pure premiums by projection methods, such methods have not been applied extensively to indemnity pure premiums. There are some rather strong arguments in favor of basing rate levels on calendar year experience. This method is used in England and apparently has worked out successfully.

The situation which has long existed in compensation insurance illustrates very forcibly the necessity of the casualty insurance

companies placing their case for adequate rates squarely before the public. Recent developments and adverse experience in automobile public liability insurance also demand not only that the case for adequate rates be placed before the public but that the public be acquainted with its responsibilities for the rates established. The automobile rate revisions of the past two years have caused storms of protest from public and agents. Little, if any, consideration has been given by the protestants to the need of the companies for increased rates, the general objection being merely that the rates are too high. The attitude of a considerable portion of the public is one of skepticism as respects the underwriting results of insurance companies. There seems to be a feeling that, in spite of the emphasis put upon underwriting losses, the companies in some mysterious and undivulged way are actually making underwriting profits. With authority to approve automobile rates being gradually assumed by or delegated to supervising state officials, the prospect of the companies obtaining fair, reasonable and adequate rates depends upon their ability to justify such rates.

As to informing the public of its responsibilities for automobile insurance rates, it should be emphasized that in the ultimate analysis the public by its attitude in presenting claims, serving as jurors, cooperating with companies as assureds in case of accident, etc., actually determine the rates. It is quite evident that there is a growing misconception in the minds of many people that an automobile liability policy is a policy of accident insurance carried by the assured for the benefit of a third party and that an injured is entitled to indemnity regardless of fault or legal liability. This, coupled with another misconception that an insurance company is an inexhaustible source of funds and that the insurance companies pay the losses rather than the insuring public, has contributed materially to the sharp upward turn in loss costs in the past few years.

There should be no hesitation on the part of the companies in placing the facts before the public and setting forth in detail past underwriting results with a clear statement of all the elements contributing to such results. If the facts as to all items entering into the experience will not stand publicity, then the companies are not entitled to much consideration. While some companies have attempted to advise their assureds of the true facts, both as

respects underwriting results and the responsibilities of the public for rates, the task of enlightening the public in general is too great and expensive for individual companies to undertake and should be assumed and carried on by and for the benefit of all companies and the general public through some appropriate and qualified central bureau or agency.

Recent trends and developments in automobile public liability insurance emphasize the desirability of giving considerable thought to the future underwriting of this line. The present bases of exposure, while not subject to the same objectionable features as are inherent in the compensation exposure basis, are not entirely satisfactory. Claim trends raise the question of whether the omnibus clause should not be restricted, where not prohibited by statute, to named bailees or bailees of a certain class, such as members of the assured's household. The rapid increase in guest claims raises the question of the desirability of excluding coverage wherever possible for such claims brought by members of the assured's household. Regardless of the legal liability of the assured, it is a serious question if from the standpoint of public policy, the automobile public liability contract should attempt to provide coverage for claims which, under ordinary conditions, would not be expected to be brought against the assured if he did not carry liability insurance.

Although attention has been drawn specifically to only the two most important casualty lines, it is not intended to imply that economic conditions do not affect the other lines. There is scarcely any casualty line which is free from the influence of economic conditions and the business cycle.

Probably one of the greatest lessons of the depression to business in general has been the necessity of carefully going over the entire structure and operations of the business and making such changes and economies as are necessary to adjust the operation of the business to changed conditions. It appears logical that operating costs should be carefully watched in prosperous years and kept within reasonable bounds in order to avoid the necessity of drastic measures in lean years. Recent economic history clearly demonstrates that general and individual prosperity depend mainly upon business stability. The casualty insurance business should be able to profit materially by the experience and lessons of the past decade.

CRITICISMS AND ANSWERS

BY

G. F. MICHELBACHER

From time to time
I have laid my heart bare before you
And you did not like it.
So I must point out to you
It is *my* heart, not yours.

My wrongness, perhaps,
Is dearer to me
Than your rightness.

Yet you must not think
That when I disagree with you
I dislike you.
On the contrary:
I love you for having ideas of your own.
I know how you came to have those ideas,
And they are precious to you.

"The Tolerator" from "Translations From the Chinese", by Christopher Morley.

I.

Actuarial science has been practiced in the field of casualty insurance for less than twenty-five years. In this comparatively brief period, actuaries have labored valiantly to overcome all manner of difficulties. They have made progress; but, speaking frankly, their accomplishments are not to be compared with those achieved in the field of life insurance, where such problems as rate-making and the establishment of reserves have been reduced to definite formulae which have universal sanction.

This failure to produce unequivocal results has irked some executives, who have expressed their exasperation in no uncertain terms. In fact, a feeling seems to exist in certain quarters that the business would be infinitely better off today if actuaries had not invaded it with their clumsy attempts to master problems which might have been solved more satisfactorily by persons endowed with "common sense" rather than a penchant for "the scientific method."

We cannot afford to ignore this attitude, unreasonable as it may be, for our opportunity to continue to work under the best conditions depends upon our ability to enjoy the support and confidence of the majority of chief executives. Once the opinion prevails that our efforts are fruitless, we shall be discredited and

the important tasks upon which we are now engaged will be delegated to others.

If those who would arraign the members of this Society were required to furnish a bill of particulars, their criticisms would fall into two classes as they have to do, first, with the actuary himself and, second, with the results which he produces. It may be instructive to present these criticisms and then to attempt to formulate answers to them. At least it can do no harm to see just where we stand in this important matter.

II.

If all the criticisms of casualty actuaries were rolled into one and reduced to a cartoon, the result would resemble the popular conception of the absent-minded professor. The actuary is pictured as functioning in an intellectual vacuum quite removed from every practical phase of business activity. He is surrounded by charts, tables, calculating machines and mathematical equations.

The experience of the carriers comes to him, not as a dramatic, living record of success or failure in measuring the insurance cost of individual industries and risks, but as a collection of dry, statistical facts. From these facts, he makes certain deductions and by a process just as mechanical as that of his calculating machines, he grinds out rates. Emotion, inspiration, imagination —these have no place in his professional conduct.

Everything he does is done according to plan or formula; each fact fits precisely into the scheme and results are inevitably produced by logical reasoning which dictates an inescapable conclusion. Mathematics is his god; logic, statistics and the Hollerith machine are his handmaidens.

He can, with impunity, give free play to his experimental inclinations. As one who is a friend, as well as a severe critic, has said in discussing the proceedings of this Society, "Here we can gather together with our a's and our b's and our x y z's and our graphic outlines to postulate the cost of this and the incidence of that, and if our calculations happen to go awry, we, individually, are not a penny the worse."

After the actuary has deliberated, set up his equations and proclaimed his results, he retires to the seclusion of his study,

there to receive, in due course, a new set of statistical facts and to repeat the process of rate-making. Agents may howl, policyholders may become hysterical, state supervising officials may issue edicts, executives may rave—a veritable storm may threaten to tear the business asunder—but there the actuary sits unmoved in the midst of confusion and impending catastrophe, serene in mind, unwilling to discard theory, confident in the scientific integrity of his results, and thoroughly satisfied with them.

A queer, unfathomable person, if you ask me!

III.

Just what kind of results may a person so thoroughly insulated against the stern realities of business life be expected to produce? Our critics also have plenty of ideas to contribute on this subject.

Having been produced by the light of "the lambent fires and coruscations that play about the aurora borealis of abstract mathematics," rates cannot be expected to take account of those practical considerations which make for successful application. The rating system is too complicated: it is too difficult to obtain the rate for an individual risk and well nigh impossible to explain it satisfactorily to the policyholder, once it has been determined And, after all this rigmarole, the rate is usually wrong; that is to say, it does not accurately measure the hazards of the risk.

No concessions whatever are made to expediency. Doing the right thing at the wrong time seems to be the proper procedure. Just when the good will of the community is required, an increase in rates is imposed upon them; when they are prepared for an increase, rates are reduced. The individual policyholder is told that if he maintains his injury record on a certain level, he will be rewarded by a lower rate; he has an almost perfect year and his reward is a higher rate!

There is too much experimentation. Producers are handed a rating system, which is heralded far and near as the best ever; next year this system is discarded and another, diametrically opposite in theory and operation, is promulgated. Classifications, rates, merit rating plans, and all the paraphernalia of rating change so frequently that there is no keeping up with them. In January of this year the rule says, "Do this"; next August a new rule on the same point will say, "Do that". Today a particular

group of risks has its own classification; tomorrow this special classification will be abolished and these risks will be thrown into a broader classification whose wording only indistinctly describes them, if, in fact, it describes them at all.

But that is not all! Because the actuary is unwilling to attempt to predict the future, his rates fail to measure trends. They reflect only the past, when "common sense" dictates the inescapable conclusion that the future will be far different. The rating system is not flexible in other respects. It takes too long to introduce changes made necessary by the impact upon the business of current developments in politics, economics, sociology and other similar factors. The result is that rates never exactly measure the conditions at any time.

A very, very sad and deplorable situation, if you ask me!

. . . . .

So much for the criticisms; now for the answers.

IV.

The criticisms of the actuary himself might have been in order at one stage of the game, but they are no longer tenable.

Early actuaries were required to pioneer in a field which had produced little or no statistical experience. They necessarily resorted to empirical methods and it must be admitted that they were somewhat antagonistic to the ideas of "practical" people. I well remember one influential actuary who seemed to be physically wounded when some pragmatic person proposed to discard a formula or to modify a result produced by a logical, painstaking actuarial process.

I maintain that actuaries have changed with the times. They are older in experience. As the business has expanded, their horizons have also expanded. Many of them are now executives with broad responsibilities. They share today—financially and otherwise—the successes and failures of the business so that if rates are inadequate, they suffer in a tangible way. Long years of contact with executives, state supervising officials, legislative committees, producers and policyholders have impressed upon them the absolute necessity of recognizing all these elements in the solution of rating problems. They realize that they must keep in touch with developments outside the business, since medi-

cal, legal, legislative, political, economic and social factors may radically affect the problems which occupy their attention.

They are not ready to discard entirely actuarial science, mathematics and logic as working materials; but they are far less prone to insist that these shall be used exclusively and that no concessions whatever shall be made to practical considerations. In short, they have progressed. They cannot claim perfection—but in the present stage of development of a business which is itself still young and in the process of growth, they are as competent as any set of technicians that could be gathered together to cope with the problems in their particular field.

Without desiring in any way to "pass the buck", it may be noted that there never was a time when actuaries had an absolutely free hand in rate-making. The actuarial committee has always been a subsidiary committee. The real and final power has always resided in committees composed primarily of executives and underwriters. It is not unreasonable to demand that these executives and underwriters, who, no doubt, would wish to be classified as practical men, should assume their fair share of the criticisms directed against rates.

To be sure, actuaries have supplied much of the procedure of rate-making and the practical men, with final authority, may claim that thereby their decisions were necessarily restricted. This is a fact; but I venture to say that without the logical structure of rate-making erected by actuaries, our rate-making process today would be in far worse condition than it is. The practical men not only used the structure; they demanded it and would have been lost without it.

At one time, a clever person, equipped only with a blank piece of paper and a pencil and endowed with a logical mind, might have produced a set of empirical rates. Today this is impossible. A great mass of data is available and the practical man knows better than to tackle the problem of rate-making until someone has analyzed and interpreted these data which constitute the great inescapable background of rate-making. After that has been done (and the actuary is particularly well qualified for this important task), it is a fact that very little remains to be done to produce final rates. Let the practical man make the most of his opportunities if he will! The actuary will not stand in his

way, provided there is a definite understanding at the outset as to where the responsibility will rest for justifying the final results.

If the experiment were not fraught with grave danger for the business, it would be extremely illuminating to gather together our severest critics, incarcerate them in an institution where their activities could be observed, and demand that they assume the entire burden of rate-making. I venture to say that some very queer results would be forthcoming. And I predict that the group would gladly forego the privilege of rate-making after a short trial. They might even promise to refrain thereafter from criticism if the responsibility of producing rates were taken off their hands. They would discover that it is far easier to criticise than to occupy the position of one who is the target of criticism!

V.

Criticisms of the results produced by actuaries fail to take into consideration the nature of the problem of rate-making in the field of casualty insurance.

The business is new and lacks standardization; experimentation is, therefore, necessary in order that we may discover the best methods of rating. It is a mistake to refer to any plan of rating as a "permanent plan" for, amid conditions which are subject to change, nothing is permanent. It is foolish, also, to insist upon the retention of the *status quo* and to resist innovations, since this can only result in the maintenance of rating plans which are hopelessly out of line with modern trends of thought and present day conditions. Pioneering is always an exciting business; but it has its hardships as well and one of these is the necessity of accommodating oneself to changes until the time comes to establish a relatively permanent order of things that can endure.

Not only is the business itself developing so that it may normally be expected to present different aspects as time passes; it is particularly susceptible to sudden changes because of external factors which affect conditions generally. Often a combination of circumstances within and without the business produces extremely radical changes which no amount of study and fore-

sight could predict. One has a feeling that the problem of rate-making is never quite the same twice in succession.

No final program of rate determination can be formulated under these conditions. Nor can anyone guarantee that the rates promulgated today for use during the next twelve months will accurately measure the conditions which will determine the cost of that period. This does not detract from the value of our accumulated experience, nor should it cause us to discard orderly methods of procedure; but it very clearly explains our inability to duplicate the achievements of our life insurance friends, who are dealing with a problem that stays put reasonably well, whereas ours is as active as an over-zealous flea (and just as annoying).

More and more the demand is for correct rates, not in the aggregate or for broad classifications, but specifically for individual risks. When broad averages are discarded and an attempt is made to establish even an approximation to the proper rates for individual risks, many difficulties are encountered. Those who hope for greater simplicity in casualty insurance rating are doomed to disappointment, for the trend is obviously in just the opposite direction. Merit rating, graded expense loadings, sliding scales of commission and similar expedients seek to do greater justice to individual risks and all must inevitably result in greater complexity of the rating process.

Finally, there is no branch of the insurance business where rate-making is so thoroughly subject to state supervision. This is an established condition which cannot be evaded; in fact, the influence of state supervision will increase, rather than diminish. With state supervision, everything that is done must be susceptible of complete analysis and justification. Guessing contests with state officials will usually result in a victory for the state. This has forced greater use of facts and formulae and has reduced the opportunities for the employment of personal judgment in rate-making.

We are counseled not to treat supervising officials "like children to be circumvented, rather than seriously minded adults to whom the problem and its solution should be demonstrated". That is exactly how we do treat supervising officials. But we must recognize that the official occupies an unenviable position

in that he is the buffer between the carriers and the insuring public. Assume that the carriers request an increase in rates, which does not rest upon an absolute statistical foundation: if the state official gives his approval, he is placed in the position of "playing a hunch," which he is unable to justify to his constituents, who invariably, nowadays, demand a very careful accounting of every decision requiring increased expenditures on their part.

No one who has attended rate hearings and has heard the loud protestations of attorneys representing groups of policyholders, would relish the thought of attempting to justify increased rates on the plea that various generalizations pointed to a higher cost next year. Even the practical man must recognize the impossibility of doing this. The public has become rate-minded and demands to know exactly *why*. Hunches and illusory expectations will not satisfy this demand for particulars.

Then there is always the possibility that rate questions may get into the courts. We have had little or no experience with this aspect of the problem; but I am bold enough to predict that the very first time the carriers resort to the courts to enforce their right to charge higher rates based in whole or in part upon the exercise of "judgment," they will fail to establish their case. There are too many facts available and the nature of the problem is too uncertain to make it possible either to ignore past experience entirely or, accepting its indications, to seek to modify them so that they will represent the probable cost of an obviously unpredictable future.

Furthermore, it is an unfortunate fact that our record for guessing has not been such as to inspire even our own confidence. The best we can hope to accomplish is to prevail upon supervising officials and the courts, if necessary, to grant us a margin of safety in the form of a contingency factor as a defense against the uncertainties of the future. This consideration, I believe, we are entitled to receive, provided we adhere in all respects to the indications of past experience—a concession on our part which involves disadvantages because of the great difficulty of ascertaining accurately the experience of the immediate past. But that is another story which has been told so often that it requires no further repetition.

VI.

What attitude should the casualty actuary maintain under the conditions which now confront him? The following suggestions are offered for what they may be worth.

So far as possible, he should maintain an open mind and be willing to consider any and all suggestions, for many years will elapse before we develop a rating structure that will stand the test of time and, in the interim, every new idea is entitled to its day in court. At the same time, he should constantly strive to perfect his methods and render his materials and equipment more efficient.

He should develop a broad interest in all phenomena that even remotely affect the business of casualty insurance, for it is not improbable that the clue to important factors affecting rates will be found in statistical facts outside the usual "experience" which today provides exclusively the materials for rate-making. Particularly should he seek to comprehend and cater to the requirements of supervising officials, agents and policyholders, for a rate that is timely, intelligible and justifiable, as well as actuarially sound, is an achievement to be devoutly desired.

He should be willing to accept responsibility for his results and should seek to attain greater accuracy in measuring the hazards of individual risks.

His platform may well be that of a scientist like Sir James Jeans, who says in "The Universe Around Us":

> "Science advances . . . by providing a succession of approximations to the truth each more accurate than the last, but each capable of endless degrees of higher accuracy. . . . Guessing has gone out of fashion in science; it was at best a poor substitute for knowledge, and modern science, eschewing guessing severely, confines itself, except on rare occasions, to ascertained facts and the inferences which, so far as can be seen, follow unequivocably from them."

Thus equipped with a purpose, supplemented by adequate machinery and a proper mental attitude, I venture to prophesy that the casualty actuary will one day place the problem of rate-making upon a basis which will be beyond criticism.

THE ATTITUDE OF THE COURTS IN CONSTRUING THE WORKMEN'S COMPENSATION ACT

BY

CLARENCE W. HOBBS

I. Introduction

The subject as originally assigned was "The Increasing Liberality of the Courts in Construing the Workmen's Compensation Act". This involves a thesis which must be characterized as "important if true", and reflects an opinion very widely held. The opinion appears to be based on the following considerations:

(a) The trend of the times has been distinctly in the direction of an increasing liberality towards injured employees. This tendency has been markedly exhibited in the legislatures, whose duty it is to declare the policy of their respective states. Few legislative sessions go by in any state without one or more additions to the compensation laws; and the proposals for addition outnumber, many times over, those actually enacted. The policy of industrial commissions has generally been in the same direction.

Between the two, the compensation laws have shown a distinct tendency to expand beyond their original scope. They no longer cover merely industrial accidents, but accidents incurred at a distance from the place of employment, in the course of coming to employment or returning home: also accidents incurred in activities linked up to the employment more or less proximately. They provide indemnities based, not on the wage actually earned, but on the wage which would have been earned had the employee been employed for what may be considered a normal working year, month, week or day; or upon the wage which would have been earned had the employee been given opportunity to demonstrate normal increase in working capacity.

Benefits are no longer, in death cases, solely for the relief of the dependents. A number of laws provide for a payment in no dependent cases for the benefit of other injured employees, and in the so-called dower provisions extend the widow's benefit by a

lump sum designed to give her a running start on a new matrimonial essay. Occupational disease benefits have at times been interpreted so broadly as to approximate a general health insurance.

In a recent case (Mobile and Ohio R. R. Co. v. Industrial Commission, 28 Fed. (2nd) 228) the court felt moved to state, "The act is not to be considered as a substitute for disability and old age compensation"; but the extensions and interpretations above cited would indicate that workmen's compensation has proved elastic enough to reach out into a very wide field of social readjustment.

The merits of this development are not now the theme of discussion, it being cited merely for the purpose of showing that this distinctly liberal tendency on the part of the legislative and administrative arms makes a similarly liberal tendency on the part of the courts *a priori* very probable.

(b) The general tendency of the courts, not particularly with regard to workmen's compensation, has been in the direction of an increasing liberality, though, after the fashion of the courts, it is a liberality which must be based on precedent and fortified by logic, and fitted as carefully as may be into the general juristic scheme of things entire. This last, however, is becoming a curious patchwork.

The profound change in economic and social ideals which has taken place in the last two decades assorts very oddly with decisions made in an earlier day. The efforts of the courts to extricate themselves from the grip of the past without an unseemly exercise of judicial legislation, and the controversies between old-school and new-school jurists have brought about some oddly inconsistent results, and nowhere more strikingly than in the Supreme Court of the United States. Here again one is unable to enlarge on the theme.

Undoubtedly the courts have no wish to stand apart from the trend of the times and through their power to construe laws and constitutions to hold the people to an outworn economic system, and have done what they could, without too striking a massacre of recorded decisions, to adopt a liberal viewpoint. This likewise adds *a priori* probability to the theory of an increased liberality with respect to this particular problem.

(c) Last of all, the courts admit they are construing the compensation laws liberally. That is not to be taken as admitting an increasing liberality, which is the point under discussion. It is a very easy matter, every time a decision comes down which upholds a decision of an industrial commission or which adopts a seemingly novel viewpoint, to jump to the conclusion that the courts are letting down the bars further and further.

As to cases of the first sort, it must be borne in mind that in passing on decisions of an administrative commission the court has commonly a limited jurisdiction. Where the right of appeal involves only questions of law, and permits no new trial on the facts, the court can consider only the record. Errors of law can be corrected, but the commission's findings of fact cannot be revised unless there is absolutely no evidence which could justify such findings.

Cases of the second sort are relatively rare. One very recent case in Georgia (Home Accident Insurance Co. v. McNair, 161 S. E. 131), may be taken as an example. This case in effect declared the maximum and minimum limits of weekly indemnity to have no application to the section of the law providing indemnities for specific injuries. Curiously enough, however, the specific case involved the application of a rule more conservative than that contended for by the industrial commission, and is radical only as applied to a considerable class of cases not then before the court. There have been, undoubtedly, radical decisions which are so by intent; but before levelling the charge of increasing liberality, it is necessary to consider, not particular cases, but broader and more general trends of decisions.

II. General Methods Used by the Courts in Construing the Compensation Laws

(a) It may be laid down at the outset that the court's power to construe is limited. Courts may not exercise legislative power. The legislature enacts the law, and its terms are binding on the courts as on everybody else, in so far as they are constitutional. The function of the court is to give effect to the law, not to what they consider the law ought to have been. (12 Corpus Juris 1302.)

(b) In so far as the terms of the law are clear and unambiguous, there is no room for construction. But in a long and involved act, such as the compensation laws, drafted by a legislative process not always conducive to clearness and logic, amended and supplemented at frequent intervals, and expressed in a language not ideally adapted to mathematical clarity of expression, there arise numerous points of doubt. Manifest and obvious errors or omissions occur: mistakes in punctuation and grammar, words capable of more than one meaning, phrases obscurely expressed, and inconsistencies and contradictions between different parts of the law. Difficulties arising from these constitute the field for judicial construction. (36 CYC 1106.)

(c) The law recognizes two general methods of construction. Statutes penal in character or in derogation of common right are strictly construed. Strict construction means that the words used are literally and technically construed, drawing all inferences in favor of the person accused of breach of the law and against the existence of new rights created by the law.

Statutes remedial in character or enacted in the interest of the public welfare are given what is known as liberal, equitable or reasonable construction, designed to carry out the intent of the law. So far as the language will permit, and perhaps a trifle beyond, it will be construed to this end, though the court will not undertake to rewrite the statute in any substantial degree. It may correct an obvious error, or omission, and may disregard obvious mistakes in grammar or punctuation, so long as these are minor matters and the general legislative intent is clear. But it will not undertake to write into the law something which the legislature obviously failed to put in. (36 CYC 1173.)

(d) In dealing with the compensation laws, the courts have generally, and very properly, ruled them to be remedial in character, and therefore, in accordance with the above principles, proper subjects for liberal construction for the purposes of promoting the object of the legislation. The law itself may provide that such construction be given. This provision sometimes appears in a negative and rather cryptic form, namely a requirement that the law shall not be construed as in derogation of the common law. Only a few decisions have ruled the compensation

law to be in derogation of the common law and therefore to be construed "according to its term and as it reads".

Ierardi v. Farmers Trust Co., 151 Atl. 822 (Del.)
Comingore v. Shenandoah Artificial Ice etc. Co., 226 N. W. 124 (Iowa)
Andrejewski v. Wolverene Coal Co., 148 N. W. 684 (Mich.)
Wilcox v. Clarage Foundry & Mfg. Co., 165 N. W., 925 (Mich.)
Zimmer v. Casey, 146 Atl. 130 (Pa.)

One case has definitely ruled that the compensation act is not to be construed as in derogation of the common law, Sadowski v. Thomas Furnace Co., 146 N. W. 770 (Wis.) and this is generally implied in all the cases which call for a liberal construction. Gobble v. Clinch Valley Lumber Co., 127 S. E. 175 (Va.) takes a compromise view, namely that though in derogation of the common law, the act because of its remedial character must be liberally construed. One other case, Brooks v. W. A. Davis Co., 254 Pac. 66 (Okla.) holds the compensation law to be in derogation of the common law, but draws therefrom the amazing conclusion that therefore no common law principle can be invoked to limit its application.

(e) The general principles laid down in compensation cases do not, by and large, contain much that is unorthodox. Heterodoxy comes, if at all, in the application of the general rules to the specific case. Thus, the propositions laid down above are accepted and confirmed in a whole series of compensation cases.

(1) The principle that where the language is clear and unambiguous, the court is not at liberty to expand it by construction beyond its natural meaning is affirmed in the following cases:

Frye's Guardian v. Gamble Bros., 221 S. W. 870 (Ky.)
Moran's Case, 125 N. E. 157 (Mass.)
Comstock's Case, 152 A. 618 (Maine)
Qualp & James Stewart Co., 109 A. 780 (Pa.)
Maguire v. James Lees & Sons, 116 A. 679 (Pa.)
Gordon v. Amoskeag Mfg. Co., 140 A. 705 (N. H.)
Lizotte v. Nashua Mfg. Co., 100 A. 757 (N. H.)
Town of Wonewoc v. Ind. Com., 190 N. W. 469 (Wis.)

(2) Ordinarily, language is to be taken in its ordinary or popular significance.

36 CYC 1114.
Northwestern Iron Co. v. Ind. Com., 142 N. W. 271 (Wis.)
Hall v. City of Shreveport, 102 So. 680 (La.)
Carville v. A. F. Bornot & Co., 135 A. 652 (Pa.)
Carmichael v. J. C. Mahan Motor Co., 11 S. W. 2nd 672 (Tenn.)
Foret v. Paul Zibilich Co., 137 So. 366 (La.)

The legislature may be regarded as having intended the ordinary legal meaning of words.

Waldum v. Lake Superior Tunnel etc. Co., 170 N. W. 729 (Wis.)

But ordinarily the purpose of the act must not be defeated by narrow or technical construction.

Perry v. W. L. Huffman Auto Co., 175 N. W. 1021 (Neb.)
Luyk v. Hertel, 219 N. W. 701 (Mich.)
Drecksmith v. Universal etc. Co., 18 S. W. 2nd 86 (Mo.)
McIntosh v. Standard Oil Co., 236 N. W. 182 (Neb.)
Tate v. Standard Acc. Ins. Co., 32 S. W. 2nd 932 (Tex.)

There is evident, in Carmichael v. J. C. Mahan Motor Co. cited above, a certain feeling that words construed under the employers' liability régime might properly receive a very different construction under the new law. The principle that the legislative intent is controlling might well justify such a conclusion.

In some cases, the court has found it proper to interpret words of the law in accordance with their meaning in other enactments.

Bay Shore Laundry Co. v. Industrial Acc. Com., 172 Pac. 1128 (Cal.)
Eastern Texas Electric Co. v. Woods, 230 S. W. 498 (Tex.)

or, in case of a law drafted under the terms of a constitutional amendment, in accordance with their meaning in that amendment.

Industrial Comm. v. Cross, 136 N. E. 283 (Ohio)

But this should not be done unless consistent with the legislative intent.

Burnes v. Swift & Co., 186 Ill. App. 460

(3) There are certain other rules for the interpretation of words and phrases. They must be read in the light of their context: not of a single section, but of the whole act. It may be taken as the legislative intent that the act be given effect if possible as a consistent and harmonious whole, and only from the whole can the legislative intent be gained.

Oriental Laundry Co. v. Ind. Com., 127 N. E. 676 (Ill.)
In re Cannon, 117 N. E. 658 (Ind.)
Wick v. Gunn, 169 Pac. 1087 (Okla.)
Lahoma Oil Co. v. State Ind. Com., 175 Pac. 836 (Okla.)
Consumers Gas & Fuel Co. v. Erwin, 243 S. W. 500 (Tex.)
Aetna Life Ins. Co. v. Ind. Com., 252 Pac. 567 (Utah)
Smith & McDonald v. State Ind. Com., 271 Pac. 142 (Okla.)
Betz v. Columbia Tel. Co., 24 S. W. 2nd 224 (Mo.)
Workmen's Comp. Exch. v. Chicago etc. R. R. Co., 45 Fed. 2nd 585 (Idaho)
Lumbermen's Recip. Ass'n v. Day, 17 S. W. 2nd 1043 (Tex.)
Petroleum Co. v. Seale, 13 S. W. 2nd 364 (Tex.)

(4) In case of need, where the law itself is not clear as to the legislative intent, it is proper to go beyond the law: to view its history, the condition of law prior to the change, and the occasion, necessity and object of the law. So much is a well-settled rule of construction. As applied to compensation cases, the object of the law is clearly the benefit of the employee, and there are many cases where the court indicates the law is to be construed liberally in the interest of the employee. But this is only another way of stating what is a general rule of construction, that a remedial statute is to be construed liberally in order to fulfil the legislative intent.

State v. District Court of Ramsay County, 158 N. W. 798 (Minn.)
Lesh v. Illinois Steel Co., 157 N. W. 539 (Wis.)
Crooke v. Farmers Mutual Hail Ass'n, 218 N. W. 513 (Iowa)
Jackson v. Diamond Coal Co., 299 S. W. 802 (Tenn.)

(f) The principle of liberal construction is, however, subject to exceptions and limitations.

(1) It admits of considerable elasticity in the treatment of language for the purpose of effecting what the court believes to be the legislative intent. But the courts ordinarily indicate that the principle does not justify adding to the law, rewriting it, or interpolating language, when such procedure would affect the rights of parties.

Proops v. Twohey Bros., 240 Pac. 277 (Ariz.)
Hahnemann Hospital v. Industrial Board of Ill., 118 N. E. 767 (Ill.)
Double v. Iowa-Nebraska Coal Co., 201 N. W. 97 (Iowa)
Frye's Guardian v. Gamble Bros., 221 S. W. 870 (Ky.)
Page v. N. Y. Realty Co., 196 Pac. 871 (Idaho)
Cawley v. American Railway Express Co., 120 Atl. 108 (Pa.)
Bosquet v. Howe Scale Co., 120 Atl. 171 (Vt.)
Pappas v. North Iowa Brick & Tile Co., 206 N. W. 146 (Iowa)
Sullivan v. Mining Corporation, 268 Pac. 495 (Mont.)
Ellis v. U. S. F. & G. Co., 6 S. W. (2nd) 811
Sloss-Sheffield Co. v. Jones, 123 So. 201 (Ala.)
Laurant v. Dendinger, Inc., 120 So. 246 (La.)
Clement v. Minning, 145 Atl. 485 (Md.)
Paterno's Case, 165 N. W. 391 (Mass.)
Bailey v. Texas Ind. Ins. Co., 14 S. W. 2nd 798 (Tex.)
Montello Granite Co. v. Schultz, 222 N. W. 315 (Wis.)
Krebs v. Ind. Com., 227 N. W. 287 (Wis.)
Stone v. Blackmer & Post Pipe Co., 27 S. W. 2nd 459 (Mo.)
Clingan v. Carthage Ice etc. Co., 25 S. W. 2nd 1084 (Mo.)
Kerns v. Anaconda Mining Co., 289 Pac. 563 (Mont.)
Comstock's Case, 152 Atl. 618 (Maine)
Colorado Fuel & Iron Co. v. Ind. Com., 298 Pac. 955 (Colo.)
Kern v. Southport Mill, 136 So. 225 (La.)
Cocklen v. Kansas City Pub. Service Co., 41 S. W. 2nd 608 (Mo.)

This principle the court recognizes as binding on both itself and the industrial commission.

Hahnemann Hospital v. Industrial Board, cited above
Bailey v. Texas Ind. Ins. Co., cited above
Kerns v. Anaconda Mining Co., cited above

It applies even when the statute as it stands seems unequitable or not in accord with legislative intent.

Proops v. Twohey Bros., cited above
Frye's Guardian v. Gamble Bros., cited above
Sullivan v. Mining Corp., cited above

On this last point, however, there are some cases where the court has extended the act to include cases within the intent but not within the strict letter of the law.

In re Duncan, 127 N. E. 289 (Ind.)
Dowery v. State, 149 N. E. 922 (Ind.)
Little v. Crow-Edwards Lumber Co., 121 So. 219 (La.)

(2) It is also a well established principle of statutory construction that where the legislature inserts definitions or lays down rules of construction, these are mandatory on the court. This looks toward a more or less literal interpretation of such definitions and rules.

Moody v. Ind. Acc. Com., 260 Pac. 967 (Cal.)
Murray v. Wasatch Grading Co., 274 Pac. 940 (Utah)

The case of Allen Garcia Co. v. Ind. Com., 166 N. E. 78 (Ill.), however, holds that definitions of "employer" and "employee" are to be broadly construed.

(3) There is a tendency sometimes to construe rather strictly those parts of the act which define its scope, i. e., sections or clauses relating to inclusions or exclusions. Thus in Oklahoma it has been held that "before one is entitled to the benefit of the act he is held to strict proof that he is in the class embraced by its provisions, and nothing can be presumed or inferred in this respect".

Harris v. Oklahoma Natural Gas Co., 216 Pac. 116

Also that to defeat an award under the act, the case must come clearly within the statutory exceptions.

Wick v. Gunn, 169 Pac. 1087 (Okla.)

On this point, too, may be cited

Oriental Laundry Co. v. Ind. Com., 127 N. E. 676 (Ill.)
Cawley v. Am. Railway Express Co., 120 Atl. 108 (Pa.)
McDonald v. Levinson Steel Co., 153 Atl. 424 (Pa.)
Span v. Jackson Walker Coal & Mining Co., 16 S. W. 2nd 190 (Mo.)
National Cast Iron Pipe Co. v. Higginbotham, 112 So. 734 (Ala.)

To the contra, however, are the cases of In re Duncan and Dowery v. State, cited above: also O'Bannon Corp'n v. Walker, 129 Atl. 599 (R. I.), which holds that the act should be construed so as to extend the benefits to the largest possible class of employees, and Texas Employers Ins. Ass'n v. City of Tyler, 283 S. W. 929, which holds that the act should be liberally construed both as to remedies and as to determining the legal entities (employees) to which it applies.

(4) Construction of the procedural provisions embodied in the act has led to a number of cases. In general, the courts have inclined to construe these in no technical spirit. Indeed, the law itself sometimes indicates that meritorious causes are not to be thrown out on technicalities. This is almost a necessity, inasmuch as the intent of the laws is to furnish a quick and simple form of relief available to a class of claimants, many of whom are ignorant; Hence, while there must be substantial compliance with the prescribed procedure, irregularities are commonly not permitted to defeat a meritorious claim.

Thus in Bowman v. Industrial Commission, 124 N. E. 373 (Ill.) the court held that statutory provisions as to notice need not be strictly complied with, if employer had actual notice. In Oriental Laundry Co. v. Industrial Commission, 127 N. E. 676 (Ill.), the court in a case where proceedings were begun in time, but writs were lost so that they were not served within time prescribed by statute, permitted the issuance of alias writs without specific statutory authority.

In Bates and Rogers Co. v. Allen, 210 S. W. 467 (Ky.) the court held that failure to prosecute a claim with due diligence would not be permitted to defeat an award to which he was otherwise clearly entitled.

In Johnson v. Hardy-Burlingame Mining Co., 266 S. W. 635 (Ky.) it was held that only a substantial compliance with statutory procedure is necessary.

In Philps v. Guy Drilling Co., 79 So. 549 (La.) the court held that insufficiency of evidence warranted a reopening of the case rather than dismissal.

In Clark v. Alexandria Cooperage and Lumber Co., 102 S. W. 96 (La.) the court indicated that technical defenses would be permitted only in extreme cases.

In Industrial Commission v. Sodic, 172 N. E. 292 (Ohio) the court held that remedial provisions are to be interpreted with utmost liberality.

In Tate v. Standard Accident Co., 32 S. W. 2nd 932 (Tex.) the court held that procedure under the act should not be so technically construed as to defeat its provisions.

On the other hand, there are cases where the rights of third parties are involved. In McCune v. Wm. B. Pell & Bros., 232 S. W. 43, it was held that sureties on a bond are bound only when the provisions of the act under which bond is given are strictly complied with.

And Texas furnishes what is probably a genuine exception to the rule, holding that statutory provisions making effective rights under the act are "exclusive, mandatory and jurisdictional" and in particular the statutory provisions as to appeals must be strictly complied with.

Texas Employers' Ins. Association v. Price, 291 S. W. 287, 296 S. W. 284
Texas Employers' Ins. Association v. Mints, 10 S. W. 2nd 220
Texas Ind. Ins. Co. v. Holloway, 30 S. W. 2nd 921
Maryland Casualty Co. v. Overstreet, 42 S. W. 2nd 160

(5) A further restriction upon liberal construction comes in dealing with the effect of the compensation acts on other statutes or on the common-law. The compensation acts contain general provisions doing away with common-law rights as to employees and employers within their terms, and removing common-law defenses as to employers electing to remain outside the act. Certain other statutory rights of action such as those under the employers' liability acts, the acts giving a right of action in cases of death caused by unlawful acts, and others were of necessity repealed as to employees coming within the terms of the compensation law.

This was effected in some cases by specific mention of the acts repealed, in other cases by language general in character. The established rule appears to be that the compensation acts are to be construed strictly as to their effect on rights outside their scope, and that rights are not to be abolished or liabilities created merely by implication. Thus, it is held, the effect of the act in removing certain defenses from the non-assenting employer is not to enlarge his common-law liability.

Walsh v. Turner Centre Dairying Association, 111 N. E. 889 (Mass.)
Towne v. Waltham Watch Co., 141 N. E. 675 (Mass.)
Lindebauer v. Werner, 159 N. Y. S. 987 (N. Y.)
American Chemical Co. v. Smith, 8 Ohio App. 361
Bosquet v. Howe Scale Co., 120 Atl. 171 (Vt.)
Wlock v. Fort Dummer Mills, 129 Atl. 311 (Vt.)
Gerthuing v. Stanbaugh-Thompson Co., 1 Ohio App. 176 (Ohio)

The effect of the act is not to abolish contracts for personal service or to restrict the employer from enlarging or diminishing business.

In re Borin, 116 N. E. 817 (Mass.)

Or to impose on the employer burdens not contemplated by the act.

Vandervoort v. Industrial Commission, 234 N. W. 492 (Wis.)
Sherman v. Industrial Commission, 234 N. W. 496 (Wis.)

Similarly, the act does not by implication narrow the rights of employees.

In re Bowers, 116 N. E. 842

Nor does it take away common-law rights, except by direct and specific provisions or by necessary implication.

Ierardi v. Farmers Trust Co., 151 Atl. 822 (Del.)
Castleberry v. Frost-Johnson Lumber Co., 268 S. W. 771, 283 S. W. 141 (Tex.)

As to the effect on other statutes, the following may be noted:

Eldorado Coal & Mining Co. v. Mariotte, 215 Fed. 51 (Ill.) holding that certain liabilities under the mining act are not repealed by the compensation act.

Meese v. Northern Pacific R. R. Co., 211 Fed. 254 (Wash.) holding that compensation act does not repeal the statute giving right of action for death as far as the liability of a person other than the employee is concerned.

U. S. F. & G. Co. v. N. Y., N. H. & H. R. R. Co., 125 Atl. 875 (Conn.) holding that the subrogation section does not relieve the claimant of the duty to prove the liability of a third party.

Markley v. City of St. Paul, 172 N. W. 215 (Minn.) holding that act does not repeal a section of city charter providing compensation for city employees.

Bruce v. McAdoo, 211 Pac. 772 (Mont.) holding that right of action for death is not repealed by Compensation Act save as to such cases as come within its provisions.

Zirpola v. T. & E. Casselman, 204 App. Div. 647. Same point.

State v. Employers Liability Assurance Corp. Ltd., 116 N. E.

513 (Ohio) holding that act does not by implication repeal provisions of code defining powers of insurance companies.

Acklin Stamping Co. v. Kutz, 120 N. E. 229 (Ohio) holding that an employer who does not bring himself within the law is liable under all other statutes of the state.

Judson v. Fielding, 237 N. Y. S. 348, holding that act does not absolve third parties from liability and that existing rights should not be taken away except by clear indication of statutory purpose.

Depre v. Pacific Coast Forge Co., 276 Pac. 89 (Wash.) holding that act does not repeal factory act.

So, too, in case of the compensation act itself.

O'Meara v. Michigan Department of Agriculture, 195 N. W. 418 (Mich.) holding that the provisions of the act as to medical benefits cannot be regarded as repealed by implication.

Eastern Texas Electrical Co. v. Woods, 230 S. W. 498 (Texas) holding that act cannot be held repealed by implication.

Foster v. Department of Labor and Industries, 296 Pac. 148 (Wash.) holding that a statute relating to procedure does not alter or enlarge compensation rights fixed by another statute.

Curry v. Ohio Oil Co., 129 So. 563 (La.) holding that a provision relating to hernia was impliedly repealed by a reenactment of the law omitting the provision.

Generally it may be laid down as a principle that statutes will not be considered as repealed, or new liabilities created merely by implication. It is not necessary that the statutes repealed be specifically named. General words clearly indicating the intent to repeal may be enough.

Colorado v. Johnson Iron Works, Ltd., 83 So. 381 (La.)

If statutes are specifically named in the repealing clause, that raises an implication that statutes not named are not intended to be repealed.

Sutherland Statutory Interpretation, sec. 388

(6) A general principle of construction may also be noted, namely that an act will, if possible, be so construed as to be constitutional.

Pioneer Coal Co. v. Polly, 271 S. W. 592 (Ky.)

(7) A further principle may be noted as an offset to the doctrine frequently affirmed, that the act is to be construed liberally

in the interest of the employee. It does not follow by any means that this can be carried to the point of working a manifest injustice to the employer.

Pacific S. S. Co. v. Pillsbury, 52 Fed. (2nd) 686

This rather protracted statement of the general principles of interpretation is made merely for the purpose of showing that when the courts speak of liberal construction they do not mean a wide-open measure of liberality. They are obliged to conform to the wording of the law. Such legislation as they may perform is very limited in scope, and cannot be carried to the extent of rewriting the law or inserting what is not there. The general principles laid down for interpreting the compensation acts are in general the same as those laid down for interpreting remedial statutes, and it is not often that a court will lay itself open to the charge of having departed from established principles. It knows its decision will be published and read, and this is a very measurable check upon its actions.

To be sure, the laying down of general principles is not the whole matter. In the remainder of the paper some attempt will be made to show how courts have applied these principles to some of the provisions of the act most frequently litigated.

III. What Persons Come Under the Act

A. *Terms and Definitions.*

This depends first of all upon the words used in referring to these persons, then, upon the definitions of those words, if any, and upon the words describing the relations between the parties and the specific exclusions and inclusions of particular types of persons or relations.

(1) "Employer" is most commonly used to describe the persons on whom the act imposes a liability, "employee" to describe those entitled to benefits thereunder, and "employment" to describe the relation. These words have a well-recognized significance. The laws of New Jersey and Pennsylvania define "employer" and "employee" as equivalent to "master" and "servant" and such is the generally accepted meaning. "Employment" is a term broad and general enough to cover all cases where the relation of master and servant exists.

These words standing by themselves without definition would properly be interpreted according to common-law principles, provided, of course, this did not conflict with other parts of the act.

Henry v. Mondillo, 142 Atl. 230 (R. I.)

But almost all acts include definitions. In some cases these are substantially identical with the common law.

Kelley's Dependents v. Hoosac Lumber Co., 113 Atl. 818 (Vt.)
Stricker v. Industrial Commission, 188 Pac. 849 (Utah)

This is not so in all cases. The definition may be either broader or narrower. If broader, it is so usually by reason of specifically including relations not commonly regarded as coming within the scope of the terms "master and servant"; especially public employers and their public officials and employees. If narrower, it is so usually by the deliberate usage of words designed to limit the scope of the act.

Reed v. Ridout's Ambulance, 102 So. 906 (Ala.)
Georgia Ry. & Power Co. v. Middlebrook, 128 S. E. 777 (Ga.)

(2) "Employer" is used in every act to designate the person on whom the act imposes a liability. The definitions frequently specify that the term includes a person, firm or copartnership, association or corporation. Some acts add the words "including a public service corporation". In the absence of such provisions the courts would doubtless interpret the word as including any person, legal entity or association of persons capable of standing in the relation of "Master": but the express inclusion is perhaps desirable in order to remove any possible question. The specific inclusion of public service corporations is not necessary except in states where the statutes treat of public service corporations in such a way that an intention to exclude them might be read from the fact that they are not specifically designated.

The definitions usually provide that the term shall include the executor or administrator of a deceased employer, or a trustee or receiver. Careful statutory draughtsmanship would probably require this inclusion, since the decease or the financial embarrassment of an employer is humanly common enough; though in the absence of the inclusion the courts would probably be able to effect much the same result by interpretation.

A further very common provision is that the term shall, if an employer is insured, include his insurer if practicable. This,

since the insurer is assuming the liabilities of the employer, seems a desirable provision.

The definitions also set forth in some form or another the functions characteristic of an employer. "Employing" (Alaska, Maryland, Nebraska, New York, Oklahoma), "who employs" (Wisconsin), "carrying on any employment" (District of Columbia, North Carolina), "who has in service" (California, Delaware, Ohio), "that makes contracts for hire" (Texas), "employing another in service or under a contract for hire" (Illinois), "who has in service or under a contract of hire" (Arizona, Colorado, Michigan, Montana, Utah), "who has in service under a contract of hire or apprenticeship" (Nevada), "who shall contract for and secure the right to direct and control the service of any person" (Oregon), differ but little, if at all, from the accepted idea of "employer" or "master". It is possible, of course, that "contract of service" or "service" are a trifle broader than "contract of hire", but the difference, if any, is practically of little importance. On the other hand, the phrases "employing other persons for the purpose of carrying on any form of trade or business" (West Virginia), "who contracts with another to engage in extra-hazardous work" (Washington), "using the services of another for pay" (Connecticut, Georgia, Indiana, Missouri, South Dakota, Tennessee, Virginia), "who employs another to perform service for him, and to whom the employer directly pays wages" (Alabama, Minnesota), "engaged in carrying on a business for trade or gain" (New Mexico), are all distinctly narrower than the simple unqualified words "employer" or "master".

If an act is designed to cover the state or governmental organizations and subdivisions, these inclusions should be specifically set forth. The state is subject to no liabilities save those it specifically assumes, and some portion of the state's immunity attaches to its governmental agencies when acting in a governmental capacity. This is merely noted at the moment, being discussed at more length hereafter.

(3) "Employee" is the term used in the great majority of acts to designate the persons given rights or benefits thereunder. Other terms occasionally appearing in the acts are "workman", "operative", "laborer", "mechanic".

"Workman" in Alabama, New Mexico and Wyoming, "work-

man" and "operative" in Arizona and Ohio are stated to be used interchangeably with "employee" or synonymous therewith; and in Oregon and Washington the term is defined in such a way as to be substantially equivalent to "employee". On the other hand "workman engaged in manual labor" in the New Hampshire Law, "workman" and "operative" in the eighteenth group of hazardous occupations in the New York Law and "laborers, workmen and mechanics" used in the section of the Massachusetts Law relating to public employments, are apparently used with due appreciation that they are narrower in meaning than "employee". "Workman" properly means one engaged in manual labor, and "operative" one operating a machine or working in a factory.

Europe v. Addison Amusements, 131 N. E. 750 (N. Y.)
Clark v. Voorhees, 194 App. Div. 13 (N. Y.)
Westbay v. Curtis & Sanger, 134 N. E. 569 (N. Y.)

As in the case of "employer" the definitions commonly include the legal representatives of a deceased employee. Specific inclusion is frequently made of aliens (probably because of treaty provisions) and minors. Decisions that minors illegally employed are not employees are responsible for the addition in a number of acts of the words "minors, whether legally or illegally employed".

Descriptions of the function which characterizes an employee are as various as in the case of "employer". "In the service of another under any contract of hire" (Alabama, Illinois, Maine, Massachusetts, Michigan, Minnesota, Montana, Nebraska, North Carolina, Ohio, Texas, Utah, Wisconsin). "In the service of another under any contract of hire or performing service for a valuable consideration" (Delaware). "In the service of another under any contract of hire or apprenticeship" (California, Georgia, Indiana, Nevada, North Dakota, Tennessee, Virginia). "Under any contract of service or apprenticeship" (Connecticut, Hawaii, Idaho, Iowa, Kansas). "Under any contract of service or hire" (Missouri). "Who has entered into the employment of, or works under contract of service or apprenticeship" (New Mexico, Rhode Island, Vermont, Wyoming). "In the service of another under any contract of employment" (South Dakota). "In the service of an employer" (Arizona, Maryland, West Virginia). "In the service of any person" (Colorado, New York).

"Any person rendering service to another" (Alaska). "Any person performing service arising out of or incidental to his employment" (Louisiana). "One who performs service for another for a valuable consideration" (Pennsylvania). "An employee of an employer" (District of Columbia), while not necessarily meaning just the same thing, are not greatly different in scope. As aforesaid "contract of hire" does not necessarily mean just the same as "contract of service". The inclusion of apprenticeship specifically is probably of small practical importance, apprenticeship being not very common. There may be some question if a contract of apprenticeship is a contract of hire, but it is probably within the meaning of "service" or "contract of service".

In Oklahoma, however, "employee" is defined as "any person engaged in manual or mechanical labor," about the equivalent of the New Hampshire formula mentioned above, this resulting in a distinct narrowing effect.

In acts which apply to public employments, it is necessary to amplify the definition of "employee" if it is intended to include officers, elective or appointive, their service not being a contract relation. The relation is properly described as "service under appointment" or "service under election" as the case may be, and these terms appear in definitions under acts of this description.

"Employment" undefined, is broad enough to include all cases of the relation of master and servant. Statutory definitions of "employment" are rarer than in case of the other two terms, and are inserted for the purpose of limitation rather than amplification. In the statutory definitions the phrase "for gain" frequently appears, this of necessity excluding religious, charitable and educational employments and the purely governmental functions of public employments. The New York law is thus limited, the phrase being "for pecuniary gain"; but this is probably overlaid by the general language of the 18th group of "hazardous" employments, the exceptions to that group indicating that it does apply to religious, charitable and educational employments.

Definitions of "hazardous" and "extra hazardous" employments appear in the laws of Arizona, Illinois, Kansas, Louisiana, Maryland, Montana, New Hampshire, New Mexico, New York, North Dakota, Oklahoma, Oregon, Washington and West Virginia. The definitions contain a list of employments declared hazardous or

extra hazardous, with or without provisions more general in nature or providing means for bringing other hazardous employments within the class. The object is to define a class as to which the act is compulsory or a class as to which the law is elective, with certain disabilities on the employer who fails to elect. The object of the "extra hazardous" provision in Arizona is uncertain.

Definitions and exceptions establish several classes of employments, not all of which appear in every law.

(a) A class as to which the compensation plan applies absolutely.

(b) A class as to which the compensation plan applies, subject to an election on the part of the employer and usually on the part of employee, but not, so far as the employer is concerned, a free election, his failure to elect entailing the deprivation of common law defenses.

(c) A class exempted from the act, but which may be brought within the compensation plan by free election or agreement.

(d) A class absolutely exempt, which cannot be brought within the act even by election.

(e) A class exempted from the act as to certain of its employees only.

It may be added, that the classes are not always clean cut, especially the third and fourth. If a particular employment is expressly exempted, without express provisions for bringing it within the act, such provisions can hardly be inserted by interpretation; and if the act makes provision for including some exempted employments by election, there is a clear implication of an intent that exempted employments for which such provision is not made may not be brought within the act.

The foregoing may indicate that determination of what persons are and are not within the acts is not the simplest of matters. In fact, there has been a deal of litigation over this part of the act, especially in the case of those states having "hazardous" or "extra hazardous" classes. A liberal interpretation of the law is taken to mean, one which includes as many as possible

within the compensation plan and excludes as few as possible; but as previously indicated, the liberality of the courts is closely tied up to the provisions of the acts. The following is submitted to indicate how the courts have dealt with the matter.

B. *Contract of Service.*

Persons can come within the act only by virtue of a contract of service express or implied.

Acklin Stamping Co. v. Kutz, 120 N. E. 229 (Ohio)
Reitmeyer v. Coxe Bros., 107 Atl. 739 (Pa.)
Nissen Transfer and Storage Co. v. Miller, 125 N. E. 652 (Ind.)
Kronick v. McLean County, 204 N. W. 839 (N. D.)

In Oklahoma the contract must be express or raised by "necessary implication."

Hamilton v. Randall, 276 Pac. 705
El Reno Broom Co. v. Roberts, 281 Pac. 273

This principle may of course be modified by terms of the statute, giving benefits in cases when there is no direct contractual relation between the parties, as in case of provisions establishing liability to employees of subcontractors or lessees; but except for such provisions, the rule is general.

A contract of service requires no particular formalities, and may exist in spite of non-compliance with usual procedure, or with procedure established by rule of the employer.

Illinois Central R. R. Co. v. Ind. Board, 119 N. E. 920 (Ill.)
Porritt v. Detroit United Ry., 165 N. W. 674 (Mich.)

The question of wage or recompense is material only when the statute so requires.

Farmer v. State Ind. Com., 205 (Pa.) 984 (Ore.)
Georgia Ry. and Power Co. v. Middlebrook, 128 S. E. 777 (Ga.)

Service need not be continuous nor for any particular period.

Pfister v. Doon Electric Company, 202 N. W. 371 (Iowa)

The true requisite is, that the parties enter into a relation whereby the one is empowered to control and direct, the other obligated to render personal service under that control and direction.

Shannon v. Western Ind. Co., 242 S. W. 774, 257 S. W. 522 (Tex.)
Press Pub. Co. v. Ind. Acc. Com., 210 Pac. 820 (Cal.)
Western Indemnity Co. v. Pillsbury, 159 Pac. 721 (Cal.)
Pace v. Appanoose County, 168 N. W. 916 (Iowa)
Angel v. Ind. Com., 228 Pac. 509 (Utah)
Skeels v. Paul Smith Hotel Co., 195 App. Div. 39 (N. Y.)

The application of the act depending on the existence of a contract, certain cases where one person renders service to another are by necessary implication excluded from the act.

1. *Volunteers.*

Where services are rendered, not in consequence of any contract, but voluntarily, the parties involved are not employer and employee within the act.

So in case of a person rendering brief, voluntary and uncompensated service.

Supornick v. Supornick, 222 N. W. 275 (Minn.)

Person driving truck in order to get company of truck driver on hunting expedition.

Texas Indemnity Ins. Co. v. Nobles, 1 S. W. 2nd 451 (Tex.)
Nobles v. Texas Ind. Ins. Co., 24 S. W. 2nd 367 (Tex.)

Boy aiding in making deliveries, with no compensation, and no definite working hours.

Lindberg v. Pantoleon, 274 Pac. 1009

Person substituting for sick brother without knowledge of employer.

Board of Commissioners v. Merritt, 143 N. E. 711 (Ind.)

Person helping employee at latter's request without knowledge of employer.

State v. Ind. Com., 193 N. W. 450 (Minn.)
Hogan v. State Ind. Com., 207 Pac. 303 (Okla.)
Arterburn v. Redwood County, 191 N. W. 924 (Minn.)

Former employee voluntarily doing service for former employer.

Hamilton v. Randall, 276 Pac. 705 (Okla.)

Bystander, called on by foreman to lend a hand in emergency.

Harris v. Oklahoma Natural Gas Co., 216 Pac. 116 (Okla.)

The cases, however, which contain the element of knowledge on the part of the person who receives the services touch on doubtful ground. The fact that services are rendered temporarily and in an emergency, and without definite promise of remuneration are not necessarily fatal to employment, and if done with the knowledge and consent and for the benefit of the person receiving the services, the elements of a contract are present.

Thus a substitution for, or the helping of an employee, with

knowledge of the employer, may bring about the relation of employee and employer.

Schullo v. Village of Nashwauk, 207 N. W. 621 (Minn.)
Benson v. Marshall County, 204 N. W. 40 (Minn.)
Herron v. Coolsaet Bros., 198 N. W. 134 (Minn.)
City of Sheboygan v. Traute, 232 N. W. 871 (Wis.)

So of a farmer helping his neighbor to put out a fire.

Gabel v. Ind. Acc. Com., 256 Pac. 564

So of a traveler injured while assisting a truck driver to release a mired truck.

Johnson v. Wisconsin Lumber & Supply Co., 234 N. W. 506 (Wis.)

Volunteers are excluded if the definition of employer or employee indicates that the relation is for pay or for valuable consideration. (Alabama, Connecticut, Georgia, Indiana, Missouri, Minnesota, South Dakota, Tennessee, Virginia, also probably Delaware and Pennsylvania). The only express exclusion of volunteers is in the New York law, but its position in the 18th group of "hazardous" employments would seem to indicate that it applies to that group only.

2. *Cases where a contract of service is contemplated but not yet complete.*

A contract of service is not complete until the last act necessary to constitute a complete meeting of minds has been performed.

Thus, persons who are proceeding to report for work at a place where the work is to be done are not employees until they have reported or been accepted, or until they actually begin work, even though transportation is furnished by prospective employer.

Susznik v. Alger Logging Co., 147 Pac. 922 (Ore.)
California Highway Com. v. Industrial Com., 181 Pac. 112 (Cal.)
The Linseed King, 48 Fed. 2nd 331

Thus, and with more reason, persons sent to the employer by an employment agency.

Wells v. Clark Watson Lumber Company, 235 Pac. 283 (Ore.)
Brewer v. Dept. of Labor and Industries, 254 Pac. 831 (Wash.)

Thus in case of person undergoing training prior to acceptance.

Fineberg v. Public Service Ry. Co., 108 Atl. 311 (N. J.)

Or a person demonstrating ability to operate machine.

Lederson v. Cassidy & Dorfman, 195 App. Div. 613, 197 App. Div. 912 (N. Y.)

Thus where an offer of employment was made, but injury took place before acceptance.

Young v. Petty Stave & Lumber Co., 7 La. App. 294

It must be observed, however, that the actual beginning of labor is not essential to constitute a valid contract of service. Frequently it is the only evidence of acceptance of an offer of employment, but acceptance may be proven otherwise.

Wabnec v. Clemons Logging Co., 263 Pac. 592 (Wash.)

3. *Cases where a contract is terminated.*

As soon as a contract of employment is definitely at an end, the relation of employee and employer ceases.

Thus a taxi driver, injured while taking out a party after his discharge without the employer's knowledge, is not an employee within the act.

Burke v. Industrial Commission, 201 Pac. 891 (Colo.)

A reasonable time after discharge to complete the preparation for departure and to depart, is, however, allowed before the relationship is at an end.

W. B. Davis & Son v. Ruple, 130 So. 772 (Ala.)

Thus in case of a miner quitting work, injured while going down manway of mine to get tools.

Nutshell v. Consolidated Coal Co., 192 N. W. 145

Thus in case of a "bucker" in a logging camp, giving notice in morning that he would quit that night, and assaulted by foreman as after supper he went to the office to receive his compensation.

Perry v. Beverage, 209 Pac. 1102

But where a discharged employee returning for his tools was injured in voluntarily helping a new employee, he could not recover under the act.

Johnson v. City of Albie, 212 N. W. 419 (Iowa)

Termination of a contract is not accomplished by a temporary lay-off for disciplinary purposes or by interruption because of an injury.

Pet Milk Co. v. Workmen's Comp. Board, 10 S. W. 2nd 455 (Ky.)
Pettitti v. Pardy Construction Co., 130 Atl. 70 (Conn.)

But a person discharged or indefinitely laid off, returning to

the employer's premises requires an act of assent on the part of the employer ere the relation is renewed.

Pederson & Voechtung v. Kromrey, 231 N. W. 267 (Wis.)
El Reno Broom Co. v. Roberts, 281 Pac. 273 (Okla.)

A miner trapped in a burning mine cannot claim the contract terminated by reason of the imprisonment.

Wirta v. North Butte Mining Co., 210 Pac. 332 (Mont.)

A transfer of the business by way of sale or of assignment for the benefit of creditors unknown to the employee does not necessarily discharge the former employee from liability under the act.

U. S. F. & G. Co. v. Industrial Com., 163 Pac. 1013 (Cal.)
Palmer v. Main, 272 S. W. 736 (Ky.)

But if the employee had notice, he doubtless could not hold the former employer. This, too, is of necessity the case where the employer dies or goes into the hands of a receiver. If the employee continues to work, it is as the employee of the estate or its legal representatives.

Keohane's case, 122 N. E. 573 (Mass.)
Unrine v. Salina Northern Ry. Co., 178 Pac. 614 (Kans.)

Similarly, where an employee is injured after a transfer of stock in a foreign corporation, but before the forfeiture of charter, the corporation is liable as employer.

Federal Surety Co. v. Shigley, 7 S. W. 2nd 607 (Tex.)

And where a contractor defaults on a contract, his surety may be charged under its contract with the duties of an employer, even before it has actually taken over the work.

National Surety Co. v. Rountree, 147 S. W. 537 (Va.)

4. *Cases where the relationship of the parties is not voluntary.*

Here, obviously, the elements of a meeting of minds are absent.

Such a situation arose where members of a longshoremen's union forcibly assumed the loading and unloading of trucks on a certain dock. It was held that one of the members, injured while loading a certain truck, was not the employee of the truck owner.

Hines v. Stetler Inc., 196 App. Div. 622 (N. Y.)

A very similar case has arisen from the practice in coal mining of having the shot firer chosen and supervised by the union miners, and paid through the union treasury. Here, however, the

courts have in two cases held him an employee because of the mine-owner's consent. But the lack of control on the part of the mine-owner makes the relation more nearly resembling independent contract.

In re Duncan, 127 N. E. 289 (Ind.)
Bidwell Coal Co. v. Davidson, 174 N. W. 592 (Iowa)

5. *Cases where the contract is for an illegal employment.*

A contract made for a purpose definitely illegal is void and unenforceable, and parties to such a contract are not employers and employees within the act.

So of a bartender in an illegally operated saloon.

Herbold v. Neff Co., 200 App. Div. 244 (N. Y.)

The same is true of a contract which explicitly contemplates a violation of the Sunday laws. But the courts have been reluctant to apply the rule in absence of clear evidence that the contract between employer and employee definitely contemplated such work.

Wausau Lumber Co. v. Ind. Com., 164 N. W. 836 (Wis.)

and have declined to apply it merely because the employee did some work on Sunday.

Texas Employers Ins. Co. v. Tabor, 274 S. W. 309 (Tex.)
Frint Motor Car Co. v. Ind. Com., 170 N. W. 285 (Wis.)
Aetna Life Ins. Co. v. Schenck, 10 S. W. 2nd 206 (Tex.)
Maryland Casualty Co. v. Ham, 22 S. W. 2nd 142 (Tex.)

or have held a contract, distinctly contemplating seven days' work a week to be for necessary work.

Maryland Cas. Co. v. Marshall, 14 S. W. 2nd 337 (Tex.)
Maryland Cas. Co. v. Garrett, 18 S. W. 2nd 1102 (Tex.)

It may be taken as certain that a breach of law on the employer's part, distinct from the contract of service, is no ground for voiding the contract.

So in case of a breach of the mining law.

Gunnoe v. Glogora Coal Co., 117 S. E. 484

The chief litigation under this heading has been in cases of minors illegally employed. Child labor laws frequently prohibit the employment of minors below a certain age, or for more than a definite number of hours, or in certain industries; and con-

tracts of service involving such employment are in most states treated as void.

Illinois—
Roszek v. Bauerle & Slack Co., 118 N. E. 991
Messmer v. Ind. Board, 118 N. E. 993
Moll v. Ind. Com., 123 N. E. 562
Kowalczyk v. Swift & Co., 160 N. E. 588
Landry v. E. G. Shinner & Co., 176 N. E. 895

Indiana—
New Albany Box & Basket Co. v. Davidson, 125 N. E. 904
Midwest Box Co. v. Hazzard, 146 N. E. 420
In re Stoner, 128 N. E. 938
In re Moody, 132 N. E. 668
Driscoll v. Weidely Motors Co., 133 N. E. 12
In re Morton, 137 N. E. 62
Raggi v. H. G. Christman Co., 151 N. E. 833
Indiana Mfgs. Recip. Ass'n v. Dolby, 133 N. E. 171

Iowa—
Sechlick v. Harris Emery Company, 169 N. W. 325

Maryland—
Tilghman Co. v. Conway, 133 Atl. 593

Michigan—
Kruckzkowski v. Polonia Publ. Co., 168 N. W. 932
Grand Rapids Trust Co. v. Peterson Beverage Company, 189 N. W. 186
Gwitt v. Fess, 203 N. W. 151

Minnesota—
Pettee v. Nazis, 157 N. W. 995
Westerlund v. Kettle River Co., 162 N. W. 680
Gutman v. Anderson, 171 N. W. 303
Weber v. J. E. Barr Packing Corp., 234 N. W. 682

New Jersey—
Hetzel v. Wasson Piston Ring Co., 98 Atl. 306
Boyle v. Van Splinter, 127 Atl. 257
Lesko v. Liondale Bleach etc. Wks., 107 Atl. 275
Mauthe v. B. & G. Service Station, 139 Atl. 245

Ohio—
Acklin Stamping Co. v. Kutz, 120 N. E. 229

Oklahoma—
Rock Island Coal Co. v. Gilliam, 213 Pac. 833

Pennsylvania—
Lincoln v. National Tube Co., 112 Atl. 73

Rhode Island—
Taglinette v. Sydney Worsted Co., 105 Atl. 641

Tennessee—
Manning v. American Clothing Co., 247 S. W. 103
Western Union Tel. Co. v. Ausbrooke, 257 S. W. 858
Knoxville News Co. v. Spitzer, 279 S. W. 1043

Texas—
Galloway v. Lumbermen's Ind. Exch., 238 S. W. 646
Bridgeport Brick & Tile Co. v. Irwin, 241 S. W. 247
Maryland Casualty Co. v. Scruggs, 277 S. W. 768
Carso v. Norwich Union Ind. Co., 293 S. W. 306
Aetna Life Ins. Co. v. Gilley, 12 S. W. 2nd 821; 35 S. W. 2nd 136; 41 S. W. 2nd 1046

Vermont—
Wlock v. Fort Dummer Mills, 129 Atl. 311
West Virginia—
Mangus v. Proctor Eagle Coal Co., 105 S. E. 909
Morrison v. Smith Pocahontas Coal Co., 106 S. E. 448
Irvine v. Union Tanning Co., 125 S. E. 110
Jackson v. Monitor Coal & Coke Co., 126 S. E. 492
Wisconsin—
Stetz v. F. Mayer Boot & Shoe Co., 156 N. W. 971

But some states, whether by interpretation or by virtue of statutory provisions, hold otherwise.

Alabama—
Chapman v. R. R. Fuel Co., 101 So. 879
Connecticut—
Kenez v. Novelty Compact Leather Co., 149 Atl. 679
Georgia—
Horn v. Planters' Products Company, 151 S. E. 552
Massachusetts—
Pierce's Case, 166 N. E. 636
New York—
Noreen v. Wm. Vogel & Bros., 132 N. E. 102, 231 N. Y. 317
Boyle v. Cheney, 193 App. Div. 408
Decker v. Pouvailsmith Corp., 207 App. Div. 853
Washington—
Rasi v. Howard Mfg. Company, 187 Pac. 327

And the courts are not inclined to carry the principle very far. Thus, a violation of another law does not render unlawful the employment of a minor, otherwise lawfully employed.

Pettee v. Nazis, 157 N. W. 995 (Minn.)
Novack v. Montgomery Ward & Co., 198 N. W. 209 (Minn.)

Evidence that a minor worked more than 8 hours does not prove the contract was for such work.

Gilley v. Aetna Life Ins. Co., 35 S. W. 2nd 136 (Tex.)

Employment of a minor contrary to parent's instructions does not void contract.

Garcia v. Salman Brick & Lumber Co., 92 So. 335 (La.)
Byrd v. Sabine Collieries Corp., 114 S. E. 679 (W. Va.)

Employment of a minor in violation of a city ordinance does not void contract.

Plick v. Toye Bros., 124 So. 140 (La.)
Walsh v. Myer Hotel Co., 30 S. W. 2nd 225

Employment in violation of a rule of Department of Labor and Industries does not void contract.

Hess v. Union Indemnity Company, 100 (Pa.) Super. Ct. 108

If the contract is void, it necessarily follows that the compen-

sation act has no application to the parties. Even where a settlement has been agreed to under the act, the agreement does not bar a suit against the employer.

Grand Rapids Trust Co. v. Peterson Beverage Co., 189 N. W. 186 (Mich.)

The states which have expressly or by implication framed their acts to cover minors illegally employed are, Alabama, Arizona, California, Colorado, Georgia, Kentucky, Illinois, Maryland, Michigan, Missouri, Montana, Nevada, New Jersey, New York, North Carolina, North Dakota, Oregon, Texas, Virginia, Washington and Wisconsin.

A number of these states have added an additional liability by way of penalty for illegal employment of minors.

Kentucky gives the minor an election to receive compensation or to sue for damages.

Virginia permits parents of a minor to sue for loss of services in addition to the minor's compensation.

North Dakota permits a suit for damages in addition to the compensation.

Oregon imposes a liability for 25% additional indemnities, up to a maximum of $500.

Illinois imposes a liability for 50% additional indemnities and gives minor option to sue at law.

Washington requires the employer to reimburse the state fund for 50% of compensation benefits paid.

Alabama, Maryland, Michigan, New Jersey and New York provide for the recovery of double indemnities in some cases.

Wisconsin provides for double indemnities in some cases, treble indemnities in others, and a right to recover the entire wage loss in cases where the indemnities do not equal this amount.

Often the extra indemnities are treated as penalties, to be paid by the employer and not by the insurance carrier. Some states provide that agreements by the carrier to pay these penal indemnities shall be void.

6. *Cases where the parties cannot make a valid contract.*

(a) A person at common law cannot make a contract with himself. Hence an employer cannot claim compensation under an insurance policy as employee.

Ind. Com. v. Bracken, 262 Pac. 521

The application of this principle to partnerships and corporations is discussed hereafter.

Three states, North Dakota, Oregon and Washington, have provisions whereby an employer may insure himself in the state fund to receive benefits provided by the law. This is, of course, not compensation insurance but a form of accident insurance.

(b) At common law, contracts between husband and wife are void. Hence a husband cannot be his wife's employee, nor a wife her husband's.

In re Humphrey, 116 N. E. 412 (Mass.)

This is not necessarily true in all jurisdictions, for the common law has been much modified by statute.

30 C. J. pp. 669, 673, 682

Contracts of a wife with parties other than her husband were void likewise at common law. But the ancient doctrine of coverture has been very largely done away with.

30 C. J. p. 583

The rule that a wife's earnings belong to the husband, which would also prevent contracts of employment between husband and wife, has likewise been much modified.

30 C. J. p. 682

But in any event, a wife working for her husband, in the absence of a specific agreement for wage, would not be his employee.

(c) At common law, the principle that a parent having control and custody of a minor, had the right to his services and earnings would ordinarily prevent a minor, working for his father, being classed as an employee.

Aetna Life Ins. Co. v. Ind. Acc. Com., 165 Pac. 15 (Cal.)

This, of course, has no application when the child is emancipated or comes of age.

Rogers v. Rogers, 122 N. E. 778 (Ind.)
Van Sweden v. Van Sweden, 230 N. W. 191 (Mich.)

Nor does it prevent a minor, working for a firm of which the father is a member, being considered the employee of the firm.

McNamara v. McNamara, 100 Atl. 31 (Conn.)

(This, however, was not the case of a minor, but a son, "mem-

ber of employer's family" under the exception of the Connecticut Law.)

At common law, contracts of a minor with persons other than his parents are not void but voidable. The compensation acts usually make specific inclusion of minors as employees, and the effect is frequently to make a minor under the compensation act practically *sui juris;* so that his elections, and his acceptance of settlements are binding. Where this is not done, provision is made for the performance of necessary acts by parents, guardian or next friend.

Widdoes v. Laub, 129 Atl. 344 (Del.)
Chicago etc. R. R. Co. v. Fuller, 186 Pac. 127 (Kans.)
Gilbert v. Wire Goods Co., 124 N. E. 479 (Mass.)
Rhodes v. J. B. B. Coal Co., 90 S. E. 796 (W. Va.)
Humphries v. Boxley Bros. Co., 135 S. E. 890 (Va.)
Elkhorn Coal Corp. v. Dects, 9 S. W. 2nd 1100 (Ky.)

The same principle renders it necessarily true that a minor cannot change his rights by voiding a contract of service or of independent contract after an injury.

Valente v. Industrial Acc. Com., 228 Pac. 667 (Cal.)
Young v. Sterling Leather Works, 102 Atl. 395 (N. J.)

(d) *Persons non compos mentis* are in a position similar to minors as to ability to contract. The compensation acts generally contain provisions as to the rights of such individuals.

C. *Application of the Acts to Relations Other Than Employment.*

Certain relations which entail the rendition of service are not properly employments, the parties standing to each other in a position other than employer and employee. These may be, and frequently are brought within the acts; but are not within them unless included either specifically or by using words of unusual breadth in the definition of Employer and Employee.

1. *Public Officers.*

All but a very few acts are applicable in some degree to the service of the state, of municipalities and other political subdivisions. These bodies have two distinct classes of functionaries—employees in the generally accepted sense, and public officers.

A public officer is one who by lawful authority is vested with

a portion of the sovereign power of the state. He may occupy a position in the legislative, administrative or judicial departments of the state itself; or in a county, city, town or district. The governor is an officer, and so (usually) is a village policeman or constable. An office differs from an employment in that it is created, not by a contract of service, but by constitution, statute, charter or ordinance. Its duties are established, not merely by the will or direction of a superior, but in part at least by law and usage. It entails a personal responsibility and not infrequently requires the exercise of personal discretion. Positions filled by popular vote are commonly offices. Appointive positions likewise may be offices. Where qualification is by taking oath or giving bond, the presumption is in favor of the place ranking as an office, although these tests are not conclusive or necessary.

As regards the more important positions, there is little room for question as to status. The minor offices are, however, not always clearly distinguishable from employments. To determine whether a particular functionary is an officer or an employee requires careful consideration of the laws under which they come within the public service.

Elective officers are specifically covered by only a few acts. More often they are either absolutely excluded or included to a very restricted degree. Appointive officers are brought within the acts more frequently than elective officers, though there is a tendency here also either to exclude or to restrict particular classes of officers, such as policemen and firemen. Sheriffs, constables and other peace officers are frequently included specifically, though sometimes as specifically excluded.

The ordinary words used to define "employee" are generally not broad enough to cover public officers. A state which covers public officers usually inserts the words "under any appointment" or "under any election". Where public officers are not specifically included, or where these phrases do not appear in the definition of "employee", it raises at least a presumption that public officers, appointed or elected are not within the law. And the specific inclusion of certain officers raises a presumption in favor of the exclusion of all not specifically mentioned.

The mass of litigation on the subject is based so highly on the interpretation of particular statutes that a decision as to the

status of a particular functionary in one state may have very little bearing on a functionary bearing the same general title in another. The discussion may, therefore, be confined to particular classes figuring frequently in the statutes and in the decisions.

(a) Sheriffs and other peace officers.

Sheriffs and their deputies, constables, marshals, and others who have in charge the enforcement of the laws and the making of arrests, are generally classed as officers.

Mono County v. Ind. Acc. Com., 167 Pac. 377 (Cal.)
Bowden v. Cumberland County, 123 Atl. 166 (Me.)

But deputies are not always held public officers.

Rockingham County v. Lucas, 128 S. E. 574 (Va.)
Cinca v. Delta County, 203 N. W. 470 (Mich.)

Nor special deputies and members of the sheriff's posse.

Millard County v. Ind. Com., 217 Pac. 974 (Cal.)
Monterey County v. Rader, 248 Pac. 912 (Cal.)
Vilas County v. Monk, 228 N. W. 591 (Wis.)

So, too, of a village marshal acting outside village on a county warrant.

Village of Schofield v. De Lisle, 235 N. W. 396 (Wis.)

The compensation acts contain a number of instances where these officers are specifically mentioned.

California (which includes all officials) excludes deputy sheriffs and deputy constables not on salary.

Colorado includes sheriffs, deputy sheriffs and members of the posse.

Minnesota includes sheriffs, deputy sheriffs, marshals and peace officers while pursuing or capturing persons charged with crime.

North Carolina includes the sheriff and his deputies.

Oregon includes "salaried peace officers".

South Dakota includes sheriffs, marshals, constables.

Wisconsin has provision like Minnesota.

(b) Policemen and Firemen.

The case of policemen and firemen has been complicated by the presence of provisions of laws granting benefits or provisions; so that in a given case they may be more favorably situated than

under the compensation act. Generally speaking, policemen rank as public officers.

Marlow v. City of Savannah, 110 S. E. 923 (Ga.)
Chicago v. Ind. Com., 125 N. E. 705 (Ill.)
Shelmadine v. City of Elkhart, 129 N. E. 878 (Ind.)
Griswold v. City of Wichita, 162 Pac. 276 (Kans.)
Hall v. City of Shreveport, 102 So. 680 (La.)
Rooney v. City of Omaha, 177 N. W. 166 (Neb.); 181 N. W. 143
Mann v. City of Lynchburg, 106 S. E. 371 (Va.)

So, too, in case of water supply policemen and park policemen

Kahl v. City of New York, 198 App. Div. 30 (N. Y.)
Harris v. City of Baltimore, 133 Atl. 888 (Md.)

and of other public functionaries discharging police functions

Game Warden.

State Conservation Dept. v. Nattkemper, 156 N. E. 168 (Ind.)

Volunteer Deputy Game Warden.

Dept. of Natural Resources v. Ind. Acc. Com., 279 Pac. 987 (Cal.)

Bridge Tender appointed under ordinance.

City of Pekin v. Ind. Com., 173 N. E. 339 (Ill.)

But in the following cases, policemen were held not public officials.

Special Policemen.

Lake v. City of Bridgeport, 128 Atl. 782 (Conn.)
Walker v. City of Port Huron, 185 N. W. 754 (Mich.)

Policemen of incorporated village.

La Belle v. Village of Grasse Pointe Shores, 167 N. W. 923 (Mich.)

Captain of Police, City of Grand Rapids.

Millaley v. City of Grand Rapids, 203 N. W. 651 (Mich.)

Policemen of City of Duluth, not appointed for regular term.

State v. Dist. Court of St. Louis County, 158 N. W. 791 (Minn.)

Policemen of City of St. Paul.

Segale v. St. Paul City Reg. Co., 180 N. W. 777 (Minn.)

Policemen Employed by City.

Fahler v. City of Minot, 194 N. W. 695 (N. D.)

Borough Policemen.

McCarl v. Borough of Houston, 106 Atl. 104 (Pa.)

Village Night Marshal.

Village of Kiel v. Ind. Com., 158 N. W. 68 (Wis.)

Patrolmen or Policemen not appointed under ordinance.

Johnson v. Ind. Com., 158 N. E. 141 (Ill.)
City of Metropolis v. Ind. Com., 171 N. E. 167 (Ill.)

So, too, Firemen are generally held public officers.

Jackson v. Wilde, 198 Pac. 822 (Cal.)
McDonald v. City of New Haven, 109 Atl. 176 (Conn.)
Johnson v Pease, 217 Pac. 1005 (Wash.)
City of Macon v. Whittington, 157 S. E. 127 (Ga.)
(Battalion Chief) Chicago v. Ind. Com., 127 N. E. 351 (Ill.)
(Captain) McNally v. City of Saginaw, 163 N. W. 1015 (Mich.)

But in the following cases were held not public officers.

Firemen and Sub-Officers.

McNally v. City of Saginaw, cited above

Firemen of City of Duluth.

State v. Dist. Court of St. Louis County, 158 N. W. 791 (Minn.)

Firemen of City of St. Paul.

Segale v. St. Paul City Ry. Co., 180 N. W. 777

Volunteer Firemen have been generally held not public officers.

Stevens v. Village of Nashwauk, 200 N. W. 927
Bingham City Corpn. v. Ind. Com., 243 Pac. 113 (Utah)
City of Burlington v. Pieters, 218 N. W. 816 (Wis.)

There are three cases where policemen and firemen were held employees because covered by an insurance policy and their salaries included in the payroll. It is hard to see how by private contract the status of a person could be changed or the scope of the act extended.

Frankfort General Ins. Co. v. Conduitt, 127 N. W. 212 (Ind.)
Maryland Casualty Co. v. Wells, 134 S. E. 788 (Ga.)
Employers Liability Assu. Corp. v. Henderson, 139 S. E. 688 (Ga.)

The variance in the cases is paralleled by a similar variance in the acts. Firemen and policemen are specifically included in the acts of Colorado, Connecticut, Delaware, Colorado, Maryland (officers of state police), and Wisconsin.

They are specifically excluded in the acts of Indiana (if entitled to benefits of pension funds) and Rhode Island, Illinois exclude members of fire department in cities of over 200,000 population.

Volunteer Firemen are specifically included in the laws of Michigan, Missouri, New Jersey, Pennsylvania, South Dakota, specifically excluded from the laws of Colorado. (The effect of general inclusions and exclusions is not here considered) Acts including policemen and firemen generally make specific provision as to cases where they are entitled to pensions.

(c) There are several cases where the service is of a peculiar character, rendering the classification of the person difficult in

the extreme. Members of the National Guard have in some instances been held employees within the act.

Nebraska National Guard v. Morgan, 199 N. W. 557 (Neb.)
State v. Johnson, 202 N. W. 191 (Wis.)
Baker v. State, 156 S. E. 917 (N. C.)

They are specifically included in the act of Virginia; specifically excluded in Colorado.

Officials who are appointed for the convenience of the public and recompensed on a fee basis, such as deputy sheriffs and deputy constables and deputy clerks are excluded by the act of California.

Election Judges and clerks are excluded by the laws of Idaho.

Jurors have been held not officials.

State v. Beaman, 170 N. E. 877 (Ohio)

They are excluded by the law of Idaho.

Other cases, where a person has been held an official, or has been rated an employee within the terms of the act depend so largely upon local statutory law that discussion is inadvisable. The general principles by which an office is distinguished from an employment are set forth at the beginning of the chapter. The decision as to status in a particular case, and the decision as to whether it comes within the provisions of a particular compensation act are dependent entirely upon the terms of the statute under which the person is functioning, and upon the terms of the compensation act.

2. *Officers and Members of Corporations.*

A corporation is an association of individuals engaged in a common enterprise under a charter or certificate of incorporation which enables them for the corporate purposes to act as a legal entity or artificial person. The corporate organization consists of the stockholders, members, a board of directors elected by them, and corporate officers elected in pursuance to the charter and by-laws. This has given rise to the question, is a member or officer of a corporation performing services for the corporation an employee within the meaning of the compensation acts?

There seems to be no reason ordinarily why a stockholder of a corporation may not also rank as employee. The practice of employees acquiring stock ownership in the corporation for which they work is becoming very common and is indeed in many cases

encouraged. The corporate entity is so far distinct from the members that there is no identity in these cases between employer and employee.

Griglioni v. Hope Coal Co., 264 Pac. 1051 (Kans.)

There is, however, a class of corporations where the stock is very closely held: one person or the members of a single family holding substantially the whole of the stock. In such cases the courts have sometimes declined to carry the legal fiction of corporate identity so far as to hold the sole or principal stockholder an employee, considering him to all intents and purposes the proprietor and employer.

Donaldson v. H. B. Donaldson Co., 223 N. W. 772 (Minn.)
Leigh Aitchison Inc. v. Ind. Com., 205 N. W. 806 (Wis.)

This seems to have been the reason for the decision in Bowne v. S. W. Bowne Co., 116 N. E. 364 N. Y., though there the majority stockholder was also president.

But in Kennedy-Kennedy Mfg. Co., 177 App. Div. 56 N. Y., a stockholder holding 95 per cent. of the stock of the company was held an employee. In case of corporate officers and directors, a new question arises, similar to the one raised in case of public officers. They hold by virtue of the by-laws and their appointment or election. There is no contract of service and accordingly, a number of decisions hold that corporate officers as such are not employees within the meaning of the act.

In re Raynes, 118 N. E. 387 (Ind.)
Brown v. Conway Light & Power Co., 129 Atl. 633 (N. H.)
Farr v. Dept. of Labor & Industries, 216 Pac. 20 (Wash.)
Carville v. A. F. Bornot Co., 135 Atl. 652 (Pa.)
Higgins v. Bates Co., 149 Atl. 147 (Me.)
Erickson v. Erickson Furniture Co., 229 N. W. 101 (Minn.)
Enid Sand & Gravel Co. v. Magruder, 297 Pac. 271 (Okla.)

The Oklahoma and New Hampshire cases are probably less illustrative of this principle than of the extremely narrow definition of "employee" used in those states.

Where, however, in addition to duties as an officer, the officer performs such duties as are regularly performed by an employee and receives remuneration based on the performance of such duties, the prevailing tendency is to class him as an employee. In case of a corporation of moderate size, the duties strictly appurtenant to the office are very slight; and a corporate officer very regularly performs a part of the work of the business,

whether as manager or as a workman. The corporation, therefore, has his services and pays him the equivalent of wages; and the principle that if injured while doing the work of an employee he should rank as such is by no means devoid of justice.

In re Raynes, cited above
Dewey v. Dewey Fuel Co., 178 N. W. 36 (Mich.)
Skouitchi v. Chic Cloak & Suit Co., 130 N. E. 299 (N. Y.)
Hubbs v. Addison Light & Power Co., 130 N. E. 302 (N. Y.)
Beckman v. J. W. Oelerich & Son, 174 App. Div. 350 (N. Y.)
Southern Surety Co. v. Childers, 209 Pac. 927 (Okla.)
Eagleson v. Preston, 109 Atl. 154 (Pa.)
Millers' Mutual Cas. Co. v. Hoover, 216 S. W. 475, 235 S. W. 863 (Tex.)
Cook v. Millers' Indemn. Underwriters, 229 S. W. 598, 240 S. W 535 (Tex.)
Small v. Gibbs Press, 225 N. Y. S. 141 (N. Y.)
Zurich Acc. & Liab. Ins. Co. v. Ind. Com. 213 N. W. 630 (Wis.)
Columbia Cas. Co. v. Ind. Com., 227 N. W. 292 (Wis.)
Higgins v. Bates etc. Co., 149 Atl. 147 (Me.)
Black & Sons v. Court of Common Pleas, 150 Atl. 672 (N. J.)
Strang v. Strang Electric Co., 152 Atl. 242
Milwaukee Toy Co. v. Ind. Com., 234 N. W. 748 (Wis.)

The matter has been dealt with in a number of states by statute.

California includes as employees under the act "all officers and members of boards of directors of quasi-public or private corporations, while rendering actual service for such corporation for pay."

Iowa excludes "a person holding an official position or acting in a representative capacity of the employer".

Kutil v. Floyd Valley Mfg. Co., 218 N. W. 613

Montana and Nevada have same provision as California.

New York provides that an executive officer shall be deemed to be included in the compensation insurance contract unless he elects not to be brought within the coverage of the chapter. Election is effected by a writing filed with the carrier. Officers not thus excluded are covered under the policy like other employees and at the same rates. Provisions are added as to estimation of their wage values and their inclusion in the payrolls. An officer who elects not to come within the policy has, of course, no rights as an employee.

Kolpien v. O'Donnell, 130 N. E. 301 (N. Y.)
Weiss v. Baker-Weiss Packing Box Co., 201 App. Div. 97

North Dakota excludes any executive officer of a business concern receiving a salary of more than $2,400.00 a year.

Oregon includes "any member or officer of a corporate employer who shall be carried on the payroll at a salary or wage not less than the prevailing salary of wage".

Texas excludes the president, vice-president, secretary or other officer provided in the by-laws of a corporation, and the directors thereof, notwithstanding they may hold other offices in the corporation and may perform other duties and render other services for which they receive a salary.

The last part of this section was added after the decisions of the Texas cases cited above, and resulted in a subsequent decision in accord with its provisions.

Lumbermen's Reciprocal Ass'n v. Bohlssen, 272 S. W. 813 (Tex.)

Washington has a provision very similar to that of Oregon.

A case somewhat akin to the above is that of the receiver of a corporation. He holds office by virtue of a court appointment and functions as the manager of the corporate business and property. After his appointment, he and not the corporation is the employer, and it is paradoxical enough to hold that he may also be an employee.

Yet there is a case where a miner was designated receiver of a coal mine and after employing a superintendent to manage the mine went to work under him as top boss. The court, following In re Raynes, held him an employee.

Hurst v. Hunley, 141 N. E. 650 (Ind.)

A similar result was reached in a Texas case involving the receiver of an oil lease but the decision was later reversed.

Southern Surety Co. v. Inabnit, 1 S. W. 2nd 412 (Tex.); 24 S. W. 2nd 375

3. *Partnerships.*

(a) The relation of partner to partner is clearly not that of employer and employee. They are common adventurers in an undertaking contemplating the sharing of profits, of losses or of both, and their services are rendered, not for pay, but on account of the common undertaking. There are cases, however, where one or more members of a partnership may contribute their personal service and receive a regular wage therefor; irrespective of the profits which may accrue. This is not unlike an employment, certainly, and an arguable case is raised in favor of holding such

a partner an employee of the firm. On this point the courts have reached opposite conclusions.

It seems clear enough that partners not receiving wages are not employees of the firm.

Thurston v. Detroit Asphalt Paving Co., 198 N. W., 345 (Mich.)
Savant v. Goetz & Lawrence, 107 So. 621 (La.)
Peterson v. Department of Labor & Industries, 295 Pac. 172 (Wash.)

Some states have held a partner receiving wages, irrespective of profits, an employee.

Gallie v. Detroit Auto etc. Co., 195 N. W. 667 (Mich.)
Ohio Drilling Co. v. State Ind. Com., 207 Pac. 314 (Okla.)
Ardmore Paint & Oil Co. v. State Ind. Com., 234 Pac. 582 (Okla.)
Knox & Shouse v. Knox 250 Pac. 783 (Okla.)

More frequently it has been held that a partner, whether or not receiving wages, is not an employee.

Cooper v. Ind. Acc. Com., 171 Pac. 684 (Cal.)
Employers' Liab. Assur. Corp. v. Ind. Acc. Com., 203 Pac. 95 (Cal.)
LeClear v. Smith, 207 App. Div. 71 (N. Y.)
McMillen v. Ind. Com., 13 Ohio App. 310 (Ohio)
Millers' Ind. Underwriters v. Patten, 238 S. W. 240, 250 S. W. 154 (Tex.)
Rockefeller v. Ind. Com., 197 Pac. 1038 (Utah)
Berger v. Fidelity Union Cas. Co., 213 S. W. 235
Wallins Creek Lumber Co. v. Blanton, 15 S. W. 2nd 465 (Ky.)
Gebers v. Murfreesboro Laundry Co., 15 S. W. 2nd 737 (Tenn.)

The matter has been in a number of states settled by statute.

California, Michigan, Nevada and Wisconsin provide that a working member of a partnership receiving wages irrespective of profits shall be deemed an employee.

Washington, Oregon and North Dakota provide a means whereby members of a firm may bring themselves under the coverage of the state fund.

West Virginia provides that a member of a firm shall not be deemed an employee.

(b) The partnership problem enters into the compensation situation in another fashion. A partnership is not a legal entity, though it does as matter of practice do business in the firm name. It occurs not infrequently that a partnership will contract to perform a service of a character and under conditions which would in the case of an individual constitute a contract of employment rather than independent contract. The partnership cannot itself be an employee, which so far as the employee goes is a personal relation.

It has been held in such cases that the individual members of the firm or association are employees, irrespective of the partnership agreement.

Coweta Casing Crew v. Horn, 233 Pac. 475 (Okla.)
Dixon Casing Ass'n v. State Ind. Com., 235 Pac. 605 (Okla.)
Twin State Oil Co. v. Shipley, 236 Pac. 578 (Okla.)
Angell v. White Eagle Oil Co., 210 N. W. 1004 (Minn.)

This problem has also been dealt with by statute. Alaska, California, Nevada and Oregon have a provision that persons associating themselves together under a partnership agreement, the principal purpose of which is the performance of labor on a particular piece of work, shall be deemed employees of the person having the work executed. A special provision is added as to estimation of average weekly earnings.

4. *Bailment.*

Bailment is a contract whereby one takes the property of another to use, with obligation to return the identical property in original or altered form. The relation of bailor and bailee is not that of master and servant. There is one case where the court held a taxicab driver to be a bailee rather than an employee.

Rockefeller v. Ind. Com., 197 Pac. 1038 (Utah)

This, however, is a case to be viewed with some caution as a precedent. If the owner of the vehicle had retained the right to control and direct the driver's activities, there would be little doubt that the contract was one of employment.

5. *Independent Contractors.*

This term comprehends a wide range of contracts, the performance of which necessarily entails labor and service, but wherein the parties to the contract do not stand in the relation of master and servant. An independent contract may involve an extensive operation necessitating the employment of many men and the assembly of large quantities of material and equipment, or it may relate to a mere job, a matter of hours or even minutes, involving merely the labor of a single man. At this end, the distinction between independent contract and contracts of hire for service becomes very vague. But an independent contractor is not within the terms of the compensation acts unless specifically included. Such specific inclusion is occasionally attempted as

will be hereafter discussed; and provisions which under certain circumstances raise a liability on the part of the principal to pay compensation benefits to the employees of an independent contractor are very common. But the inclusions are never so sweeping as to render the distinction between employee and independent contractor unimportant.

(a) *In general.*

The doctrine of "independent contractor" plays an important part in the law of employer's liability. Some courts have indicated a feeling that it is alien to the scheme of workmen's compensation.

Rheinwald v. Builders' Brick & Supply Company, 168 App. Div. 425 (N. Y.)
McDowell v. Duer, 133 N. E. 839 (Ind.)

More generally the courts have recognized the distinction as entirely pertinent to the obligation to pay compensation benefits. The great number of cases, on this point and on others hereafter discussed renders citations inadvisable except to illustrate exceptional points. Since the distinction is in some cases very vague, the principle of liberal construction might justify deciding a close case in favor of employment rather than independent contract.

Domer v. Castator, 146 N. E. 881 (Ind.)

On the whole, however, since the question is jurisdictional and has an important effect on the rights of parties, the courts have not shown anything like a general tendency to depart from what may be regarded as principle.

The nature of the relation between the parties being in either event one of contract, the contract itself is the determining factor. If the contract is in writing, and unambiguous, the contract, on familiar principle, is conclusive as to all details which it covers.

Industrial Com. v. Maryland Cas. Co., 176 Pac. 288 (Colo.)
LaMay v. Ind. Com., 126 N. E. 604 (Ill.)
Opitz v. Hoertz, 161 N. W. 866 (Mich.)

Where the contract is oral, the intent must be determined so far as possible from the language used.

Spickelmier Fuel & Supply Co. v. Thomas, 144 N. E. 566 (Ind.)

But where, as is often the case, the contract is informal and fails to disclose the vital points, those must be determined from usage or from a consideration of all facts relating to the affair.

Many of the cases are founded, not on a single conclusive test, but on a series of tests, no one of which by itself may be sufficient, but which in the aggregate are regarded as justifying the finding. The principal tests used are as follows:

(1) The test regarded as most significant is the measure of control which the principal is entitled to exert.

"The relation of master and servant exists whenever the employer retains the right to direct the manner in which the business shall be done, as well as the result to be accomplished: or in other words, not only what shall be done, but how it shall be done."

39 Corpus Juris 35

"If, however, the employer retains control over the means and methods by which the work of a contractor is done, the relation of master and servant exists between him and servants of such a contractor."

39 Corpus Juris 35

Conversely, an independent contractor is one over whom the principal retains the right to control what result shall be accomplished, but leaves him free to accomplish the result according to his own methods.

This distinction is drawn in case after case, and is generally regarded as conclusive. Every now and then a court indicates that it is not absolutely conclusive or not the sole test.

Barrett v. Selden Breck Construction Co., 174 N. W. 866 (Neb.)

But more generally it is accepted as the governing principle and in any event the existence of the right to control carries great weight.

There are many cases, to be sure, where there is no specific agreement as to the method of work and very little that can be determined from the acts of the parties to show an intent one way or the other. At times this has been held to justify a finding that there was no right of control, and that, therefore, the relation was independent contract.

Fidelity & Deposit Company v. Brush, 168 Pac. 890 (Cal.)
Battey v. Osborne, 115 Atl. 83 (Conn.)

The fact can hardly be regarded as conclusive and may easily be overridden by other evidence. It is not inconsistent with the

relation of master and servant to give the employee considerable discretion and leave him without supervision for long periods.

It is generally agreed that it is the right to control, rather than the actual exercise, which is important. If the employer has the right to intervene and direct the method of doing the work, that settles the status as employment, even though the right was never exercised.

But to constitute an employment there must be a right to control. Mere voluntary acquiescence in supervision is not enough.

Industrial Com. v. Maryland Cas. Company, 176 Pac. 288 (Colo.)

Neither does an interference without right change the relation from independent contract to employment.

McCormick v. Sears, Roebuck Company, 236 N. W. 785 (Mich.)

What constitutes direction and control is frequently an issue. A degree of supervision is consistent with the relation of independent contractor, provided it goes no further than assuring that the contract is being performed in accordance with the agreement; or that there is a proper co-operation between the different contractors engaged on a single piece of work. But the relation of independent contractor implies a free hand to accomplish the results contracted for in his own way; and a control that goes into his methods is inconsistent with this freedom, and establishes the relation of master and servant.

Anything like a review of the mass of cases involving this point is impossible. It is sufficient to observe that a very slight control has at times been held sufficient to establish an employment and that under circumstances where practically for a long time no control could be exerted, as in case of persons employed to drive an automobile between distant points, or even more strikingly, an aviator doing advertising work.

Schonberg v. Zinsmaster Baking Co., 217 N. W. 491 (Minn.)

(2) A line of distinction almost equally conclusive is drawn upon the point whether the parties have the right to terminate the relationship at will.

"Inasmuch as the right to control involves a power to discharge, the existence of the power to discharge is essential and an indicium of the employment."

39 Corpus Juris 35, 36

Likewise, if the workman has the right to quit work at will, he is an employee rather than an independent contractor. The independent contractor is one who undertakes to bring about a certain result. By virtue of his contract, he has a right to bring about the result and to earn the recompense agreed upon, and is liable in damages if he fails to carry out the contract. Hence, if either party may without liability terminate the relation at will, an employment is indicated rather than an independent contract.

This point is frequently cited as decisive. There are a few cases, however, where the test has been held not conclusive.

Wagoner v. A. A. Davis Constr. Co., 240 Pac. 618 (Okla.)
Western Indem. Co. v. Shannon, 242 S. W. 774, 257 S. W. 522 (Tex.)
Royal Indem. Co. v. Ind. Acc. Com., 285 Pac. 912 (Cal.)

And to the general rule there are two well-defined exceptions. It is entirely consistent with the relation of independent contractors to reserve a right to rescind or terminate the contract for failure to do the work properly or for failure to live up to specifications. This is of course very different from the broad power involved in a contract of employment to terminate the relation at will.

Odle v. Charcoal Iron Co. of America, 187 N. W. 243 (Mich.)
Swartz v. Borough of Hanover, 122 Atl. 215 (Pa.)

Also, it is a common enough practice in contracts of employment to stipulate for a notice or to contract for a definite term.

Eng-Skell Company v. Ind. Acc. Com., 186 Pac. 163 (Cal.)

(3) A lack of definiteness in the contract may serve to mark it as a contract of employment rather than independent contract. An independent contractor is, as indicated above, one who agrees to achieve a certain result. His work should, therefore, contemplate a more or less clearly defined job. But the test furnishes no very clear-cut line. Definiteness is a matter of degree, and in transactions between man and man, seldom complete or universal. One employed generally at a given recompense and for no particular time is probably an employee. If the task is definite, if the duration of the work is specified, or the amount to be accomplished, the relation may be either employment or independent contract.

Contracts for piece work, such as cutting wood and lumber at a price per cord or per thousand feet, or contracts for hauling lumber or goods at a price regulated by the amount hauled may

under particular circumstances be decided by the courts as cases of employment or as cases of independent contract. The existence of this uncertain middle ground prevents the test being regarded as conclusive, though it is frequently adverted to. All that can be said is, that to establish a relation of independent contract, some degree of definiteness, an obligation to accomplish something is necessary.

(4) Control over hours of labor is sometimes accepted as furnishing a distinction between employee and independent contractor. If a man agrees to give all his time to a particular task, or to devote definite and substantial working hours such as are usually worked by employees, that may suffice to mark him as an employee. If he is free to come and go as he pleases, is not required to report at any particular time or to make record of his time of leaving, or is not required to give any specific time to the work at all, being held merely to the accomplishment of the task, the relation may well be that of an independent contractor. The test is, however, not conclusive. An employee is not necessarily held down to a strict time schedule, nor is an independent contractor necessarily the complete master of his time. Freedom or the lack of it, in point of hours of labor, is merely an indication, persuasive but not conclusive.

(5) Working for more than one employer, or the right to do so, may in a given case be an element in deciding a person an independent contractor rather than an employee. If one carries on a regular business of contracting or jobbing, and the work done is that which he regularly does for any who call for his services, that may be an important element in marking the particular service as an independent contract. But if one in connection with a more or less regular contract of service does odd jobs for others, the latter fact does not necessarily operate to fix the status of the former relation, particularly if the odd jobs are of less consequence than his regular job. One may be the joint employee of several employees, or may serve several employers severally at different times, ranking as employee of the one for whom he happens to be working at the time. Or one may be an employee during regular hours and an independent contractor for the same employer or for other employers in his odd

time. Nothing is more common than for one regularly employed to take on additional work of an evening or on Saturday afternoons and holidays. The value of the test therefore depends on the particular facts.

Press Pub. Co. v. Ind. Com., 210 Pac. 820 (Cal.)
Sinclair Refining Co. v. Ind. Com., 148 N. E. 291 (Ill.)
Western Metal Supply Co. v. Pillsbury, 156 Pac. 491 (Cal.)
Famous Players-Lasky Corp. v. Ind. Acc. Com., 228 Pac. 5 (Cal.)
Hall v. Ind. Acc. Com., 206 Pac. 1014 (Cal.)
In re Clancy, 117 N. E. 347 (Mass.)
Winslow's Case, 122 N. E. 561 (Mass.)
Chisholm's Case, 131 N. E. 161 (Mass.)
Gallagher's Case, 134 N. E. 344 (Mass.)
Dyer v. James Black Masonry & Contracting Co., 158 N. W., 959 (Mich.)
Woodhall v. Irwin, 167 N. W. 845 (Mich.)
Zoltowski v. Ternes Coal & Lumber Co., 183 N. W. 11 (Mich.)
Sargent v. A. B. Knowlson Co., 195 N. W. 810 (Mich.)

(6) The mode of paying compensation may have some bearing on the nature of the relation, but is not very significant. An employee may be paid in any way: by regular wage, daily, weekly or otherwise: on a piece-work basis: in a lump sum for a particular job: by commissions or fees, or by a share in the profits of a particular work: and there are cases where he may receive no compensation at all or may pay for the privilege of working. Very nearly as wide a range in methods of paying compensation appears in cases classed as independent contractor. To be sure, the payment of a regular wage is more consistent with employment than with independent contract, and payment by lump sum for a particular job or by share in profits more consistent with independent contract than with employment; but the circumstance is in itself not enough to justify the drawing of a conclusion. The mode of paying compensation may, however, be significant in states which define "employee" as one working "for pay" or as one "to whom the employer directly pays wages".

Arterburn v. Redwood County, 191 N. W. 924 (Minn.)

(7) Furnishing of tools and equipment, supplies and material, and agreements for paying expenses or reimbursing the principal for services rendered are of no great weight. An employee may, in connection with his service, do all these things, and the independent contractor may use the tools and equipment and the supplies and material furnished by his principal. There are cases, however, where the furnishing of tools and equipment and the

procuring of supplies and materials is so important and extensive as to indicate an independent contract rather than a contract of service.

(8) The fact that the agreement gives a person the right to employ labor may have some bearing on his status as employee or independent contractor. If the person has no obligation to render personal service, if he may at will employ his own assistants, control and direct them or discharge them, he is almost certainly an independent contractor. If, however, the principal has the right to exercise acts of control over the persons hired, then the principal is the employer of the person and of those employed by him. The circumstance that the principal pays the persons hired, or even puts them on his payroll, is not conclusive evidence of control. Neither is the fact that the subordinate hires and pays his own help conclusive to determine him an independent contractor.

An employee may be vested with authority to engage assistants, and whether they are paid by him or by the employer makes very little difference. (But see Arterburn v. Redwood County, cited above.) The authority may be expressed or implied. The question whether persons hired by an employer are employees of the employer depends on the law of agency. If the employee acted within the scope of an express authorization, or if such employment came within the apparent scope of his authority, then there is a valid contract of service between the employer and the persons hired by the employee. Otherwise the persons hired have no relation to the employer, ranking as employees of the employee.

What constitutes control or the right to control has been previously discussed. One case may be noted where the right to settle disputes between an employee and persons hired by him was treated as sufficient to set up the relation of employer and employee.

Root v. Shadbolt & Middleton, 193 N. W. 634 (Iowa)

(9) Notice may be made of other elements which have entered into discussions on the question of employee or independent contractor.

A stipulation in the agreement that subcontractor and his

employees should be considered as employees of the principal contractor held to settle the relation.

Burke v. Ind. Com. of Utah, 286 Pac. 623 (Utah)

Fact that principal agreed to protect subordinate with workmen's compensation insurance held not sufficient to prove relation of employment.

Svolos v. Harry Marsch & Co., 195 App. Div. 674 (N. Y.)

Fact that principal helped independent contractor in a minor way held not to constitute latter employee.

Beach v. Velzy, 143 N. E. 805 (N. Y.)

Fact that contractor agreed to furnish compensation insurance for his employees held to show relation of independent contractor.

Barrett v. Selden Breck Const. Co., 174 N. W. 866 (Neb.)

Fact that a contractor is bound not to subcontract without consent of principal has some bearing in question whether his relations with subordinates are employment or independent contract.

Herron v. Coolsaet Bros., 198 N. W. 134 (Minn.)

Fact that principal regarded subordinate as employee and so reported him to the Department of Labor and Industries held material.

Hector v. Cadillac Plumbing and Heating Co., 198 N. W. 211 (Mich.)

The fact that the employer would be liable to a third person for injury caused by negligence of worker indicates latter employee.

Clark's Case, 126 Atl. 18 (Me.)

Contracts containing guarantees held independent contract

F. & C. Co. v. Ind. Acc. Com., 216 Pac. 578 (Cal.)
Hall v. Ind. Acc. Com., 206 Pac. 1014 (Cal.)

The above does but scant justice to the great wealth of cases on the subject. As above indicated, the most vital tests are the degree of control vested in the principal and the right to terminate relations. The others are more or less indicative but not conclusive.

(b) *Statutes which specifically include or exclude independent contractors as employees.*

Independent contractors are specifically excluded from the definition of employee in Iowa. Delaware accomplishes the same

in effect by providing that contractors and subcontractors shall be deemed employers and not employees.

Alaska and California exclude "independent contractors" from the definition of "employer", but define the term as "any person who renders service, other than manual labor, for a specified recompense for a specified result, under the control of his principal as to the result of his work only, and not as to the means by which the result is accomplished".

This definition is somewhat narrower than the common-law definition of "independent contractor", and the result is to include as employees "a certain number of independent contractors whose service consists of manual labor".

Pryor v. Ind. Acc. Com., 198 Pac. 1045 (Cal.)

Alabama and Minnesota, in the provision of law dealing with schemes for evading the act, provide that this shall not apply to contracts let in good faith and add that a person is not to be deemed a contractor or subcontractor who does work on the employer's premises and with the employer's tools and appliances, nor one who does piecework (the Minnesota act differs from the Alabama act in adding "or under the employer's direction"; also in adding after the provision regarding piece workers: "or in any way when the system of employment used merely provides a method of fixing wages").

It is uncertain from the position of this limitation whether it is intended to make the act generally applicable to the independent contractors included in the limitation, but it is presumed that such is the effect.

Arizona has a definition of "independent contractor", generally in accord with the common-law definition.

"A person engaged in work for another who, while so engaged is independent of the employer in the execution, not subject to his rule or control, but engaged only in the performance of a definite job or piece of work, and subordinate to the employer only in effecting a result in accordance with the employer's design is an independent contractor."

Exceptionally, the provisions of the laws which hold a principal responsible in certain cases for the payment of compensation benefits to the employees of contractors and subcontractors include a liability to contractors and subcontractors as well.

(See laws of Arizona, Colorado, Missouri, Montana, Utah.)

Somewhat more commonly, the provisions of the laws setting up a liability of similar character against lessors of mining property extend the liability to cover the lessees and their contractors and subcontractors, as well as their employees.

(See laws of Arizona, Colorado, Missouri, Nevada, Utah. The Missouri act applies to leases other than of mining property. Under the Kansas law the owner is joint employer with lessee, and presumably not liable to the lessee.)

(c) *Acts raising a liability to pay compensation to the employees of contractors and subcontractors.*

The possibility of using independent contracts as a means for evading liability under the compensation acts, and the feeling that one who employed a contractor or subcontractor owed some duty to the employees from whose labor he derived a benefit, even if he were not their direct employer, led to the enactment of statutes in many states raising a liability in such cases to pay compensation benefits. In California, the laws ran into a constitutional objection.

Carstens v. Pillsbury, 158 Pac. 218
Sturdevant v. Pillsbury, 158 Pac. 222
Western Ind. Co. v. Ind. Acc. Com., 158 Pac. 1033
Thaxter v. Finn, 173 Pac. 163

Hence, in California the principal has no duties to pay compensation to the employees of an independent contractor.

Freiden v. Ind. Acc. Com., 210 Pac. 420

Elsewhere there seems no constitutional objection, the principle involved differing not materially from that behind the statutes for mechanics liens.

All states except Alaska, California, Delaware, District of Columbia, Iowa, Maine, North Dakota, Rhode Island and West Virginia have such statutes. The provisions of the laws exhibit some little variation, and since it is not possible to set them out in detail, it may suffice to indicate the following types of law:

(1) Laws which raise a liability in case of a plan or scheme, fraudulent or otherwise, to avoid the provisions of the compensation act.

(2) Laws which raise a liability in case of a contractor subletting to a subcontractor.

(3) Laws which raise a liability in case of an employer letting out on contract work which is part of his regular business and not merely incidental thereto, and which is conducted on his premises or under his control.

(4) Laws which raise a liability in case of anyone employing a contractor.

This is not an exhaustive list by any means, there being acts which do not fall exactly into any of these four classifications. As indicated in the preceding section, only a few laws raise a liability to pay compensation to the contractor himself: generally they are for the protection of employees.

Centrello's case, 122 N. E. 560 (Mass.)

The character of the liability, too, varies greatly. In some cases the principal appears to be jointly and severally liable with the immediate employer, the employee being free to proceed against either (if both are subject to the act) or against both. He can, however, recover but a single award of benefits.

Kloman v. Ind. Com., 195 N. W. 404 (Wis.)
Burt v. Clay, 269 S. W. 322 (Ky.)
McEvilly v. L. E. Meyers Co., 276 S. W. 1068 (Ky.)

More commonly, the liability of the principal is secondary: one which arises only in case the immediate employer does not comply with the terms of the act, either as to electing to come within the act or as to furnishing the necessary security for the payment of benefits.

Clark v. Monarch Engineering Co., 221 N. Y. S. 93, 161 N. E. 436 (N. Y.)
Corbett v. Starrett Bros., 143 Atl. 352 (N. J.)
Lumsden v. Dwight P. Robinson Co., 162 N. E. 512 (N. Y.)
Artificial Ice & Cold Storage Co. v. Waltz 146 N. E. 826 (Ind.)

In Georgia, it has been held that an employee of a subcontractor must found his claim to proceed against the principal by first presenting his claim to his immediate employer.

Zurich General Acc. & Liab. Co. v. Lee, 136 S. E. 173 (Ga.)

But elsewhere the subcontractor's employee need not show he cannot collect compensation from the subcontractor in order to recover against his employer's principal.

The nature of the obligation of the principal is somewhat peculiar. The act makes him, not the employer, but a quasi-

employer. At the same time, the real employer retains his duties and obligations, whatever they may be. The liability of the principal, in other words, does not avoid the pecuniary liability of the immediate employer.

Kloman v. Ind. Com., 195 N. W. 404 (Wis.)
Artificial Ice & Cold Storage Co. v. Waltz, 146 N. E. 826 (Ind.)

The case of Corbett v. Starrett Bros. cited above states that the liability of the principal is merely a guarantee of the obligations of the subcontractor to insure liability. But this is so only in a very general way. The principal under the terms of the law becomes liable under certain circumstances to pay compensation to the employee exactly as if he were the true employer. In some acts indeed the phrase appears "in any case when such employer would have been liable for compensation if such employee had been working directly for such employer".

But this may set up a liability to pay compensation distinctly different from the liability of the true employer. In numerous cases the true employer is not liable to pay compensation benefits at all, either because he has not complied with the act, or because he is otherwise not subject to its terms. Take the very common case of an employer of less than a certain number of men.

It has been held, in a state where the limit is set at five, that if the principal employs more than five, an employee of a subcontractor who does not come within the terms of the act may still recover compensation benefits from the principal.

Bello v. Notkins, 124 Atl. 831 (Conn.)

This does not hold true in Ohio, where the act seems to call for a different rule. There, in order for the employee of an uninsured subcontractor to have a right against the principal, the principal and the subcontractor must each individually employ regularly at least five workmen.

Ind. Com. v. Everett, 140 N. E. 767 (Ohio)
DeWitt v. State, 141 N. E. 551 (Ohio)

So in Missouri it is held that an employer who has accepted the act is liable to pay compensation to the employee of a subcontractor who has not accepted the act.

De Lonjay v. Hartford Acc. Co., 35 S. W. 2nd 911

A similar result was reached in Wisconsin. This case is notable in that it holds that, irrespective of the fact that the subcontrac-

tor was not under the act, the principal, paying compensation benefits, was entitled to recover the cost from the subcontractor.

Milles v. McCabe, 190 N. W. 81

And the right against the principal apparently exists where the right against the immediate employer has been lost.

Palumbo v. G. A. Fuller Co., 122 Atl. 63

Or where the employee cannot collect damages from his immediate employer.

Machae v. Fellenz Coal Dock Co., 197 N. W. 198 (Wis.)

And in a late case recovery was allowed in case of one who was not an employee, but an unemancipated minor working for his father.

Pruitt v. Harker, 43 S. W. 2nd 769 (Mo.)

The converse case occasionally arises—a case where the employer would not have been liable under the act but for the character of the work done by the contractor. Thus, under the peculiar provisions of the Illinois act which limits the scope of the provision making the principal liable to two classes of employments, the one in question being persons engaged in the business of erecting, maintaining, etc., buildings, the courts declined to hold a college liable for compensation to the employee of a plumber, hired to repair a gas leak.

Lombard College v. Ind. Com., 128 N. E. 553

So, too, in case of a Cooperage Company to the employee of one contracting to paint smokestacks on its factory.

T. Johnson Co. v. Ind. Com., 137 N. E. 789

A series of questions arise under the statutes as to their effect on other rights and liabilities of the parties. Apart from the act, a principal is liable to the employee of his contractor for an accident caused by his own wrongful act; and the circumstance that the immediate employer is under obligation to pay compensation for this accident does not affect the principal's liability.

Tralle v. Hartman Furniture Co., 217 N. W. 952 (Neb.)

The question is, does the act by imposing a liability on the principal affect this other liability? He is at most a quasi-employer, and the argument for exempting him from liability to action at law is not the same as in case of his immediate employer.

It has been held that the same accident cannot be the basis of both an action against the principal to recover compensation and an action at law, this double liability being, according to the court, unconstitutional.

Reed v. Cleveland etc. R. R. Co., 220 Ill. App. 6

Also, that the secondary liability of the principal does not preclude an action at law against him for the wrongful death of the employee of a subcontractor.

Clark v. Monarch Engineering Co., 221 N. Y. S. 93

As to whether this is true in cases where the subcontractor has insured his liability under the act to pay compensation, thus complying with the act, the courts differ. In New York it is held that this circumstance does not bar an action for damages against the principal

Clark v. Monarch Engineering Co., 161 N. E. 436 (N. Y.)
Lumsden v. Dwight P. Robinson Co., 162 N. E. 512 (N. Y.)

But elsewhere it is held that the employer's liability to action at law ceases.

White v. Geo. A. Fuller Co., 114 N. E. 829 (Mass.)
White v. Geo. B. H. Macomber Co., 138 N. E. 239 (Mass.)
Fox v. Dunning, 255 Pac. 582 (Okla.)
New Amsterdam Cas. Co. v. Rinehart & Donovan Co., 255 Pac. 587 (Okla.)

The same problem exists when the principal is under obligation to pay compensation benefits and the immediate employer is not. Assuming that the latter is guilty of a wrongful act, does the fact that another is under the law bound to pay compensation to his employee furnish him a defense? The Wisconsin case cited above would indicate that there the employee may elect to sue or to claim compensation.

See also, Artificial Ice and Cold Storage Co. v. Waltz, 146 N. E. 826 (Ind.)

There is a good argument for either view. On the one hand, the general intent of the compensation laws is not to raise a double right, and a result which gives one indirectly employed rights which a direct employee would not have is peculiar. On the other hand, it is equally anomalous to consider a right of action to which the employee is entitled as having been modified or taken away by the act of a third party.

In most cases where the principal is but secondarily liable,

the secondary liability is avoided by requiring the independent contractor to take out insurance.

Houlihan v. Sulzberger & Sons Co., 118 N. E. 429 (Ill.)
Trumbull Cliff Furnace Co. v. Schackovski, 161 N. E. 238 (Ohio)
Clark v. Monarch Engineering Co., 161 N. E. 436 (N. Y.)
Lumsden v. Dwight P. Robinson Co., 162 N. E. 512 (N. Y.)

And the principal, paying compensation has a right to recover from the immediate employer, even in cases where the immediate employer could not have been held to pay compensation.

Miller v. McCabe, 190 N. W. 81 (Wis.)

Under acts when principal and immediate employer are jointly liable, the one paying compensation should be entitled to contribution from the other.

Burt v. Clay, 269 S. W. 322 (Ky.)
McEvilly v. L. E. Myers Co., 276 S. W. 1068

Requirement of the subcontractor to take out compensation insurance means a real requirement. A mere demand that he insure his liability is not enough.

Butler St. Foundry & Iron Co. v. Ind. Bd., 115 N. E. 122 (Ill.)

Nor is the statute satisfied by a mere agreement of the contractor to protect the principal against liability for injuries to two employees.

Sherlock v. Sherlock, 201 N. W., 645 (Neb.)
(but see Byrne v. Henry A. Hitner's Sons Co., 138 Atl. 826 (Pa.))

As a rule, the statute is not satisfied by anything short of an actual insurance by the subcontractor.

Parker Washington Co. v. Ind. Board, 113 N. E. 976 (Ill.)
Corbett v. Starrett Bros., 143 Atl. 352 (N. J.)

The Indiana law lays down a specific requirement, that the principal require the subcontractor to produce a certificate from the Industrial Board that he has given security to pay compensation as required by law. Under such a provision, nothing less than the actual production of the certificate will serve to discharge the principal.

Chicago etc. R. R. Co. v. Kaufmann, 133 N. E. 399 (Ind.)
Zainey v. Rieman, 142 N. E. 397 (Ind.)
Artificial Ice & Storage Co. v. Waltz, 146 N. E. 826 (Ind.)
Moore v. Copeland, 163 N. E. 235 (Ind.)

The following may be indicated as to the various types of act previously outlined. Acts which impose the liability because of

a plan or scheme, fraudulent or otherwise, to avoid the act, have only occasionally come before the courts. That an actual and definite intent to avoid the act would be illegal may be assumed, and a contract made in pursuance of such a design would be void.

Parker Washington Co. v. Ind. Board, 113 N. E. 976 (Ill.)

But a contract which avoids the compensation act is not necessarily illegal.

McCormick v. Sears, Roebuck Co., 236 N. W. 785 (Mich.)

Under an act which does not use the word "fraudulent", an agreement by a constructor to protect the owner against liability for injuries has been held a "scheme, artifice or device."

Sherlock v. Sherlock, 201 N. W. 645 (Neb.)

On the other hand, an arrangement whereby a subcontractor assigned to a bank the benefit of a contract for the construction of a ditch, the bank's officers becoming his sureties, was held not to be a conspiracy to avoid the workmen's compensation act.

Erickson v. Kricher, 209 N. W. 644 (Minn.)

Acts of this type are, due to the vagueness of their terms, an uncertain protection to the employee and a potential hazard to the principal.

Certain acts apply solely to contractors and subcontractors. Acts of this kind do not raise a liability against a principal employer or owner who is not himself a contractor.

Siskin v. Johnson, 268 S. W. 630 (Tenn.)
Halpin v. Ind. Com., 149 N. E. 764 (Ill.)

If an act applies to contractor and subcontractor, the principal's liability is not limited to the employees of his immediate subcontractors, but extends to the employees of their subcontractors also.

Palumbo v. G. A. Fuller Co., 122 Atl. 633 (Conn.)

And this even if the original contractor had no knowledge of subsequent subcontracts.

Qualp v. James Stewart Co., 109 Atl. 870 (Pa.)

But the liability does not extend to cases where the parties are not in the relation of contractor and subcontractor.

Morrison v. Weber King Mfg. Co., 6 La. App. 388

So, in case of two contractors working on the same premises, but operating under different contracts with owner.

Qualp v. James Stewart Co., cited above

So, in case of a city, letting a contract to clear street of snow
Brooks & Buckley v. Banks, 139 Atl. 379 (Pa.)

So, in cases where contracts may be regarded as terminated
Lange Canning Co. v. Ind. Com., 197 N. W. 722 (Wis.)
Pruno v. Westine, 203 N. W. 330, 204 N. W. 576 (Neb.)

And the liability extends only to operations covered by the contract between the principal and the subcontractor. It is not a general liability to all employees of the subcontractor, however they may be engaged.

Thus in Pruno v. Westine, cited above, the decision turned in part on the fact that the contract was for blasting merely, whereas, the employee was injured in removing rocks after the blast.

Thus in Crane v. Peach Bros., 137 Atl. 15 (Conn.), compensation was refused to a truck driver working for a subcontractor, injured while repairing an automobile chain.

Thus in Rinebold v. Bray, 227 N. W. 712 (Mich.), compensation was refused to the employee of a contractor hauling pipe, injured while picking up tools which had fallen from a truck sent to repair a truck of the contractor.

Acts which raise the liability against owners or proprietors who sublet by contract work, which is a regular part of their business and not merely incidental, furnish a fruitful field of discussion as to what operations may be considered a regular part of their business and what fall into the category of purely incidental.

Operations of construction and repair are commonly regarded as incidental, and not a regular part of the business.

Thus held, in case of a plumber's employee, injured in repairing a gas leak in a college building.
Lombard Coll. v. Ind. Com., 128 N. E. 553 (Ill.)

In case of a cooperage company letting contract to paint its smokestacks on its factory.
T. Johnson Co. v. Ind. Com., 137 N. E. 789 (Ill.)

In case of a machinist, sent by a machine shop to repair machine of principal.
Texas Refining Co. v. Alexander, 202 S. W. 131 (Tex.)

In case of the employee of a contractor erecting a standpipe for a city as part of its water works.
Bamber v. City of Norfolk, 121 S. E. 554 (Va.)

In case of the employee of contractor repairing building for manufacturing company.

Corbett's case, 170 N. E. 56 (Mass.)

In case of employees of contractor for the erection of factory buildings and collateral necessary construction and reconstruction.

Horrell v. Gulf & Valley Cotton Oil Co., 131 So. 709 (La.)

Construction and repair operations may, however, be legitimate parts of the work of the employer.

Thus, one engaged in building and selling houses was held liable to employee of a contractor engaged in erecting houses.

Clementine v. Richie, 1 La. App. 296

Subcontractor's employee injured in removing fire-escape held injured in work not purely incidental to contract of building contractor.

Willard v. Bancroft Realty Co., 159 N. E. 511 (Mass.)

Cases not in accordance with that rule are:

Purkable v. Greenland Oil Co., 253 Pac. 219 (Kans.) Where an oil lessee was held liable to the employer of a contractor injured while constructing a derrick.

Burt v. Munishing Woodenware Co., 193 N. W. 895 (Mich.), where a manufacturer was held liable to the employee of a contractor injured while repairing a boiler.

Window Washers have figured in two cases. In American Radiator Co. v. Finnegan, 254 Pac. 160 (Colo.) the employee of a window cleaning company was held not entitled to compensation from manufacturing company.

In Fox v. Fafnir Bearing Co., 139 Atl. 778 (Conn.), the opposite conclusion was reached.

Contracts involving unloading and transportation have produced a variety of decisions.

Employee of contractor undertaking to unload coal held not entitled to compensation from refining company.

Indiahoma Refining Co. v. Ind. Com., 142 N. E. 527 (Ill.)

Employee of contractor undertaking to remove sawdust from a sawmill held not entitled to compensation from sawmill owner.

Farmer v. Purcell, 201 Pac. 701 (Kans.)

Employee of contractor undertaking to convey lumber owned by manufacturing company to a point where it could be shipped to company's factory held entitled to compensation from company.

O'Boyle v. Parker Young Co., 112 Atl. 385 (Vt.)

Driver for independent contractor hauling coal from coal yard held entitled to compensation from company.

Ind. Com. v. Continental Inv. Co., 242 Pac. 49 (Colo.)

Employee of contractor undertaking to move picks, shovels, etc., for contractor constructing building, held entitled to compensation from principal contractor.

In re Comerford, 113 N. E. 460 (Mass.)

Employee of independent contractor undertaking to move material from employee's yard to building held entitled to recover compensation from employee.

In re Comerford, 118 N. E. 900 (Mass.)

Employee of stevedoring firm, unloading sugar from vessel on pier controlled by refining company held not entitled to compensation from refining company.

McGrath v. Penn Sugar Co., 127 Atl. 780 (Pa.)

City held liable as principal to employee of contractor for removal of garbage.

City of Milwaukee v. Fera, 174 N. W. 926 (Wis.)

Gas Co. operating oil wells held liable as principal to employee of teaming contractor hauling pipe between oil wells.

Seabury v. Arkansas Natural Gas Corp'n, 127 So. 25, 130 So. 1 (La.)

The dividing line should properly come on the point whether the unloading or transportation is a normal part of the operations of the employer or merely an occasional incident; but it cannot be said that the cases are consistent.

For other cases, see

Fish v. Bonner Tie Co., 232 Pac. 569 (Idaho)
McIlvain v. Blue, 203 Pac. 701 (Kans.)
Helton v. Tall Timber Logging Co., 86 So. 729 (La.)
Hasenfuss v. Ind. Com., 199 N. W. 158 (Wis.)

In acts of this type liability is frequently limited to accidents occurring in the course of the employee's work or on premises owned by him or under his control.

For cases on this point, see

Halpin v. Ind. Com., 149 N. E. 764 (Ill.)
In re Comerford, 118 N. E. 900 (Mass.)
Williams v. Buchanan, 261 S. W. 660 (Tenn.)
Siskin v. Johnson, 268 S. W. 630 (Tenn.)

Acts of the fourth type, namely: acts extending liability in all cases where the employer has failed to require a certificate that

the contractor has given security as required by law present little room for argument.

(6) *Lessor and Lessee.*

The relation of landlord and tenant does not ordinarily involve a situation where the compensation acts could apply. But a lease may involve undertakings by the tenant actually outside the normal obligations of tenancy. One well marked instance is in case of leases of mineral properties which are used as a means of exploiting those properties for the benefit of both lessor and lessee. The relation is apparently so similar to a contract of service that a number of states have inserted in these laws provision raising a liability in the lessor to pay compensation to lessees and their employees.

Such provisions appear in the laws of Arizona, Kansas, Nevada and Utah. The Kansas law does not give benefits to lessee, but constitutes the lessor joint employer with lessee.

The Colorado and Missouri laws have broader provisions, treating lessors and lessees substantially on the basis of principals and independent contractors. The Oklahoma law contains a provision as to lessors and lessees which is a masterpiece of obscurity.

Green v. State Ind. Com., 249 Pac. 933 (Okla.)

If a lease is purely incidental to a contract the case is probably within the laws relating to independent contractors.

Wisinger v. White Oil Co., 24 Fed. 2nd 101

Cases involving the relation of lessor and lessee under the laws cited above are not of frequent occurrence.

Under the Kansas law, it is probably necessary to show that an employee claiming compensation from the lessor was under the direction and control of the lessor.

Maughlelle v. J. H. Price & Sons, 161 Pac. 907 (Kans.)

Under the Colorado law, the lessor is liable to an employee of the lessee.

The lessee's agreement to carry insurance does not relieve the lessor.

The lessor's liability exists in cases where the lessee employed only two men, a number insufficient to bring the lessee under the compensation law.

Index Mines Corp'n v. Ind. Com., 259 Pac. 1036

Independently of statute a lessor under a bona fide lease, not made with intent to avoid the compensation act, is not liable to employees of lessee.

Burks v. Glenmora Service Station, 2 La. App. 530
Blake v. Am. Fork & Hoe Co., 131 Atl. 844 (Vt.)

D. *Application of the Acts to Employments Exempt in Whole or in Part by the Operation of Law.*

1. *The United States Government and its Agencies.*

A sovereign state cannot be held liable in contract unless the incurring of the liability is authorized by its constitution or by statute. It cannot be held liable in tort unless it has voluntarily assumed liability.

36 Cyc. 881

This principle, and the fact that the United States Government has never consented to be subject to state compensation laws, and had indeed adopted a compensation law for its employees some years before the earliest state compensation law, so effectively removes the United States from the possibility of being subject to a state compensation law as an employer that no state except North Carolina has even thought it necessary to state that federal employees are not within the act. The provision in the act of the District of Columbia, exempting employees of the United States subject to the Federal Compensation Act, has of course, a real excuse for being.

There is, however, a familiar principle, that while the sovereignty of the state extends to its public corporations, that is to say, corporations created for governmental purposes wherein the sovereign retains the entire beneficial interest, the immunity applies only so long as they engage in purely governmental pursuits. If the state goes into business through a public corporation, it is to that extent so far divested of its sovereign character that the corporation becomes subject to the rules of law governing private corporations.

14 Corpus Juris, P. 75 and cases cited, note 39

This principle has appeared in a few compensation cases.

The Director General of Railroads, during the war was held subject to a state compensation act. Here, however, a presiden-

tial order was involved which made him subject to "all statutes and orders of regulating commissions" of the several states.

Hines v. Meier, 273 Fed. 168

The United States Shipping Board Emergency Fleet Corporation was held subject to the Pennsylvania Compensation Act, and this holding the Supreme Court declined to reverse on writ of error.

U. S. Shipping Board etc. Corp. v. Sullivan, 76 Pa. Super. Court 30
261 U. S. 146

During the war the army sent a company of drafted soldiers to work with civilian employees of a lumber company, getting out timber for the government. One of these soldiers being injured was declared entitled to the benefit of a state compensation act.

Rector v. Cherry Valley Timber Co., 196 Pac. 653 (Wash.)

Similarly, the employee of a contractor, holding a contract for the delivery of U. S. mail, was held entitled to the benefit of a state compensation act.

Comstock v. Bivens, 239 Pac. 869 (Colo.)

There are two cases which involve employees of contractors for the National Forest Service working on land wholly controlled by the government. In both cases the compensation laws were applied:

State v. State Ind. Acc. Board, 286 Pac. 408 (Mont.)
Nickell v. Dept. of Labor & Industries, 3 Pac. 2nd 1005 (Wash.)

Doubtless a state may not exercise its police power in such a way as to hinder the governmental functions of the federal government. But the immunity of the state does not in all cases extend to its functionaries. They are amenable in some degree to the laws of the states in which they are, and there seems no good reason to believe that the cases listed above are at all unorthodox.

2. *Federal Territorial Jurisdiction.*

The Federal Government has territorial jurisdiction and, under Article 1, Section 8, Paragraph 17 of the Constitution, exclusive legislative authority over the District of Columbia and over land ceded to it, or acquired with consent of the state. Doubtless a state can cede its jurisdiction so completely as to bar it from applying its compensation laws to employments operating in the

ceded territory; and in one case it was held that this was the fact.

Willis v. Oscar Daniels Co., 166 N. W. 496 (Mich.)

Ordinarily, however, it seems proper to regard the United States as having the same rights over such territory as any state. A state may extend its compensation law to cover all employers and employees within its territorial jurisdiction. Since the relation is founded on contract, if the contract was made within its bounds, the state has authority to annex to it such conditions as are within its constitutional powers, and can therefore cause the statutory incidents of the compensation acts to go with the contract wherever it is to be executed. But the state cannot prevent a state which gains jurisdiction over both the parties to an employment from regulating that employment within its bounds. In the two cases cited above, involving the Federal Forest Service, state compensation laws were applied to injuries sustained within territory within the control of the United States.

3. *Federal Jurisdiction Over Interstate Commerce.*

Under the provisions of Act 1, Section 8, clause 3 of the Federal Constitution, Congress has power to regulate commerce with foreign nations and among the several states and with the Indian tribes. This power when exercised is sole and exclusive. A state may regulate commerce purely intrastate, and may exercise a police jurisdiction over those transacting interstate commerce within its bounds so long as this does not regulate, prohibit or burden interstate commerce itself. It may, too, with reference to local needs, when the matter regulated is not of a national character and where uniformity is not necessary, make regulations until Congress sees fit to act.

12 Corpus Juris 13-17

But once Congress has acted, this action not only supersedes all state laws on the subject, but excludes additional or further regulation by the states.

In the matter of regulating the rights and duties of employers and employees engaged in interstate commerce, Congress has acted. The Federal Employers' Liability Act (35 Statutes at Large, c. 149), applies to common carriers by railroad while engaging

in commerce between the several states, the District of Columbia or foreign nations. It gives a right of action in tort, based on negligence, in cases where at the time of the injury both the carrier and the employee were engaged in interstate commerce. It does not apply to carriers not operating by railroad, to carriers not engaged in interstate commerce, nor to employees of carriers engaged in interstate commerce, who were not at the time of the injury engaged in interstate commerce.

Congress had therefore acted, but not in a way that covered all the ground covered by the compensation acts. A New Jersey case (Rounsaville v. Central R. Co., 94 Atl. 392) took the position that the compensation act, adding merely a statutory incident to the contract of service, might still have application, although admittedly it could not bar the remedy provided by the Federal Act. Winfield v. N. Y. C. & H. R. R. Co., 110 N. E. 614 (N. Y.) and Erie R. Co. v. Winfield, 96 Atl. 394 (N. J.) took the position that since the Federal Act did not cover injuries not caused by negligence, the compensation acts might apply to such cases. And there were cases which expressed the opinion that compensation acts elective in form might apply to interstate carriers by railroad and their employees if both elected to be subject thereto (Connole v. Norfolk & Western R. R. Co., 216 Fed. 823).

To these points the Supreme Court of the United States registered an emphatic negative.

N. Y. Central R. R. Co. v. Winfield, 244 U. S. 147
Erie R. R. Co. v. Winfield, 244 U. S. 170

The court in these cases took the ground that since the Federal Act had adopted the principle that liability based on negligence governed rights to compensation for personal injuries, this of necessity precluded the states from setting up any other standard; and that Congress intended the act to be comprehensive of those instances in which it excluded liability, as of those in which liability was imposed. It was further indicated that the states might not interfere with the operation of the act, either by putting the carriers and their employees to an election or by attributing such election to them through a statutory presumption.

Accordingly, any award of compensation must be reversed whenever it appears that the employee is the employee of a rail-

road engaged in interstate commerce, and was at the time of the injury himself engaged in interstate commerce.

Philadelphia R. Ry. Co. v. Hancock, 253 U. S. 284

The court had already held that a state act was applicable to railway employees not engaged in interstate commerce.

N. Y. C. R. R. Co. v. White 143 U. S. 188

The question, when is an employee engaged in interstate commerce, belongs properly to the interpretation of the Federal Employers' Liability Act. This has been extensively litigated, and the compensation cases of necessity follow the principles laid down.

Briefly, it may be indicated that with regard to those, actually operating trains or otherwise actually facilitating the transit of goods or persons carried in interstate commerce or maintaining the roadbed and equipment used therein, no question can arise.

Winfield v. N. Y. Central R. R. Co., 244 U. S. 147
Erie R. R. Co. v. Winfield, 244 U. S. 170
P. & R. Ry. Co. v. Hancock, 253 U. S. 284
Paden v. Rockford Palace Fur. Co., 207 Ill. App. 534, 257 U. S. 645
Runge v. Chicago Jct. Ry. Co., 226 Ill. App. 187

When it comes to the case of those engaged in construction, repairs and other incidental operations, the best that can be said is that each case must stand on its own merits as to whether it is part and parcel of interstate commerce or merely incidental. No general rule has been evolved.

Ind. Com. v. Davis, 259 U. S. 182

Without, therefore, going into the interpretation of the Federal Employers' Liability Act, it will suffice to cite a few compensation cases.

The compensation acts do not apply to employees engaged in interstate commerce, even though the Federal Act gives them no redress.

Walker v. Chicago I. & L. Ry. Co., 117 N. E. 969 (Ind.)
Matney v. Bush, 169 Pac. 1150 (Kans.)

If both employer and employee are under the Federal Act, the employee cannot maintain a third party suit under the compensation act.

Schultz v. C. G. W. R. R. Co., 226 Ill. App. 559

A railroad becoming an assenting employer under the Massachu-

setts Act need not insure its employees employed in interstate commerce.

Armburg v. B. & M. R. R. Co., 177 N. E. 665 (Mass.)

Where a flagman employed jointly by an interstate and an intrastate carrier is killed by a train of the interstate carrier, at a time when a train of the intrastate carrier is passing at the same time, the Industrial Commission may grant compensation against the intrastate carrier.

San Francisco & Oakland Terminal Ry. v. Ind. Acc. Com., 179 Pac. 386

There is no reason why the compensation acts cannot apply to carriers other than railroads engaged in interstate commerce. Thus common carriers by water have been held subject to the act.

Lindstrom v. Mutual S. S. Co., 156 N. W. 669 (Minn.)

Likewise express companies

Pushor v. Am. Ry. Express Co., 183 N. W. 839 (Minn.)

and telegraph companies

Western Union Tel. Co. v. Boyd, 294 S. W. 1099 (Tenn.)

To the foregoing should be added a note as to statutory provisions bearing on the subject.

In the District of Columbia, Massachusetts, Nevada, New Hampshire, New Jersey, Pennsylvania, Rhode Island and Wisconsin, there is no provision relative to railroads engaged in interstate commerce. In these states, therefore, the rule would appear to be that the state act applies to railroads save insofar as they and their employees come within the scope of the Federal Act: that is to say, except when both the railroad and its employees are engaged in interstate commerce.

The acts of Connecticut, Delaware, Hawaii, Idaho, Illinois, Indiana, Iowa, Louisiana, Maine, Missouri, South Dakota and Vermont contain statutory provisions in effect establishing exclusions in accordance with the laws of the United States.

A provision appearing in the laws of California, Kansas, New Mexico and Wyoming, that the act shall not apply "to employees or employments which, according to law, are so engaged in interstate commerce as not to be subject to the legislative power of the state, nor to employees injured while they are so engaged" has probably the same effect.

A provision appearing in the laws of Arizona, Maryland, Michi-

gan, New York, Ohio, Utah and West Virginia, that the act shall apply "to employers and their employees engaged in intrastate and also in interstate and foreign commerce for whom a rule of liability or method of compensation has been or may be established by the United States, only to the extent that their mutual connection with intrastate work may and shall be clearly separate and distinguishable from interstate or foreign commerce" sets up a rule differing from the above, if at all, in being a trifle narrower. In Maryland, Michigan, New York, Ohio and West Virginia, addenda are made contemplating possible future actions by Congress, or providing means whereby through election or waiver, the state might perchance be enabled to "muscle in". West Virginia having done so much, however, adds a proviso that "this chapter shall not apply to employees of steam railroads or steam railroads partly electrified or express companies engaged in interstate commerce". Why the elaborate provisions preceding this summary proviso are longer necessary is not immediately apparent.

Of the other states, Alabama and Tennessee provide that the act shall not apply "to any common carrier (doing an interstate business) while engaged in interstate commerce"—an exclusion far broader than that required by the Federal Act, which applies only to carriers by railroads. The exclusion contains no reference to the occupation of employees.

Alabama excepts from its act "the operation of railroads as common carriers". Colorado excepts "common carriers engaged in interstate commerce or their employees". Georgia excepts any common carrier by railroad engaging in interstate commerce and any person receiving injury or death while employed by such carrier in such manner. The act does not apply to intrastate common carriers operating by steam power. Kentucky excepts "steam railways or such common carriers other than steam railways for which a rule of liability is provided by the law of the United States".

Minnesota excepts "any common carrier by steam railroad".

Montana excepts railroads engaged in interstate commerce, but declares act applicable to railroad construction work.

Nebraska declares railroads engaged in interstate or foreign commerce subject to the powers of Congress and not within the provisions of the act.

North Carolina excludes railroads and railroad employees.

North Dakota excludes "any employment of a common carrier by steam railroad".

Oklahoma excludes "operating any railroad engaged in interstate commerce".

Oregon excludes railroads engaged in interstate commerce, but permits them to come within the act as to any hazardous operation other than railroad operation and maintenance.

Texas excludes employees of any person, firm or corporation operating any steam, electric, street or interurban railway as a common carrier.

Washington excludes all railroads engaged in interstate and foreign commerce and their employees. It in substance enacts the Federal Act for the benefit of employees of such railroads not covered by the Federal Act and provides for the inclusion of clearly separable intrastate enterprises and industries carried on by such railroads, and also specifically includes railroad construction work.

The provisions of the West Virginia law are noted above.

Most of the above acts exclude more than is required by the Federal Act, creating a class of employees subject neither to the Federal Act nor to the compensation act. Some apparently exclude all employees of the carriers, whether engaged in interstate commerce or not. Some exclude carriers other than those engaged in interstate or foreign commerce by railroad. The interpretation of the specific acts by the courts is not here undertaken.

4. *Employments Coming Within the Maritime Jurisdiction of the United States.*

The maritime jurisdiction of the United States is derived from two sources.

The so-called "commerce" clause, previously adverted to, gives the United States paramount jurisdiction to regulate commerce with foreign nations and between the states. This naturally includes commerce by water as well as by land, and carries by necessary implication rights to control the uses of the navigable waters of the United States. Article III, Section 2, defines the judicial power of the United States as extending "to all cases of admiralty and maritime jurisdiction". This by necessary impli-

cation confers power to regulate the rights and duties of parties within the sphere ordinarily appertaining to admiralty and maritime matters.

Admiralty jurisdiction, as far as the courts are concerned, is a peculiar type of procedure, the characteristic feature of which is the enforcement of rights, whether in contract or in tort by means of an action *in rem*, brought not against individuals, but against the vessel. The Judiciary Act of 1789, by constituting the Federal District Courts as Courts of Admiralty, effectively barred the state courts from exercising this form of process. The act, however, contained a clause "saving to suitors the right of a common-law remedy where the common law is competent to give it"; and under this saving clause, both the Federal and State courts can entertain proceedings at common law; in the form of actions for damages against individuals based either on maritime contracts or maritime torts.

1 Corpus Juris 1253

The jurisdiction of the admiralty courts, in matters of contract, is limited to contracts maritime in character. For non-maritime contracts, or for contracts only partly maritime, the peculiar admiralty process does not obtain.

1 Corpus Juris 1266, note 15
1 Corpus Juris 1267, note 20

What constitutes a contract maritime in character has been extensively litigated. The term is not confined to contracts involving services wholly on water; nor has it reference to the place when the contract is made or to be performed. Generally, it may be said that it is a contract which relates directly to navigation and commerce on navigable waters.

1 Corpus Juris 1266, notes 16, 17, 18

The jurisdiction of the admiralty courts in tort is based on the *locus delicti,* the place where the tort is committed. A tort upon navigable waters of the United States is a maritime tort. Navigable waters of the United States are those which form in their ordinary condition, by themselves, or by uniting with other waters, a continued highway over which commerce is or may be carried on with other states or foreign countries in the customary modes in which such commerce is conducted by water. It does

not apply to waters wholly within a state, having no navigable outlet. It does apply to canals connecting navigable waters.

1 Corpus Juris 1257, notes 93, 94, 95

The law applied in the courts in maritime cases, in the absence of Federal legislation, is the maritime law. Congress has a right, coincident with the jurisdiction of the admiralty laws, to enact legislation governing the rights and duties of parties in cases of maritime torts. The right of the states to legislate in this field is similar to their right in matters of interstate commerce. They can enact regulatory legislation for local purposes, providing this legislation does not prohibit or interfere with maritime commerce itself; and there is an undefined field wherein they can legislate in the absence of legislation by Congress. But, as was said in Southern Pacific R. R. Co. v. Jensen, 244 U. S. 205, "Where the subject is national in its character, and admits and requires uniformity of regulation, affecting alike all the states, and as transportation between the states including the importation of goods from one state into another, Congress alone can act upon it and provide the needed regulations. The absence of any law of Congress on the subject is equivalent to its declaration that commerce in that matter is free."

A certain degree of state legislation in the marine field had, prior to the enactment of the compensation acts, been sustained by the Federal courts. The instance most nearly akin to the compensation problem was the providing of an action for death caused by wrongful act—an action unknown to the common law. The Federal courts not only permitted the state courts to apply these statutes in cases of death caused by maritime torts, but upheld them themselves in appropriate cases.

American Steamboat Co. v. Chase 16 Wall 522
The Hamilton, 207 U. S. 398
La Bourgogne, 210 U. S. 95

The compensation acts, however, raised a peculiar problem. They affected the remedy for actions in tort, substituting therefor a remedy sounding in contract; and the remedy thus provided was exclusive. Question at once was raised, whether a state could apply its compensation laws to contracts of service maritime in character, and as to whether a state law, extraterritorial in character, was applicable to cases involving maritime torts.

The application of state compensation acts to maritime cases was halted by the case of Southern Pacific R. R. Co. v. Jensen, 244 U. S. 205. This involved the case of a stevedore injured on board a vessel. The employment was maritime in character, the injury sustained on navigable waters of the United States. The court held that to such a case the state compensation act had no application. The precedents regarding state death statutes were regarded (in the majority opinion) as not controlling, this not being an attempt to supplement the maritime law, but to abrogate it and set up an exclusive remedy of a different character. The court also felt that this was a matter wherein the usages of maritime commerce required uniformity.

Clyde S. S. Co. v. Walker, 244 U. S. 255, very similar in its facts, was decided in the same way

The case of Chelentis v. Luckenbach S. S. Co., 247 U. S. 372, involved, not the compensation act but the right of a state to do away with the well-known maritime rule that a seaman's right of recovery for injuries was limited to wages, maintenance and cure, and to substitute the full indemnity rule of the common law. This the court held the state might not do. Subsequently the Congress passed the act of June 5, 1920 c. 250, which in substance applied the Federal Employers' Liability act to seamen. This operated to remove conclusively cases involving seamen from the compensation laws. The act has been rather liberally applied to include cases of non-seamen doing work customarily performed by seamen.

International Stevedoring Co. v. Haverty, 269 U. S. 549, 272 U. S. 50
Employers' Liability Assur. Corp. v. Cook, 281 U. S. 233

The case of Peters v. Veasey, 251 U. S. 121, was the case of a longshoreman injured on a vessel while removing cargo. The decision was in accord with Southern Pacific S. S. Co. v. Jensen. In this case mention was made of the act of October 6, 1917, c. 97, passed in consequence of that case, and amending the clauses of the Judiciary act saving to suitors the right of remedy at common law by adding the words "and to claimants the rights and remedies under the Workmen's Compensation Law of any state". This was passed after the cause in suit arose, and the court held it had no retroactive effect.

The case of Knickerbocker Ice Co. v. Stewart, 253 U. S. 149, involving the death of a bargeman drowned while doing work of

a maritime nature, rendered it necessary to pass directly upon the merits of this law. The court held it invalid as involving an unconstitutional delegation of legislative power. Congress made a second attempt to legislate on the subject, in the Act of June 10, 1922, c. 216, substituting for the clause declared invalid the phrase "and to claimants for compensation for injuries to or death of persons other than the master or members of the crew of a vessel, their rights and remedies under the workmen's compensation law of any state, district, territory or possession of the United States". For the reason given above, this was later declared unconstitutional.

State of Washington v. W. C. Dawson Co., 264 U. S. 219
Industrial Accident Commission v. Rolph id.

The matter was finally settled by the enactment of the United States Longshoremen's & Harbor Workers' Compensation Act, applying to injuries sustained on waters of the United States by certain maritime employees.

Meantime, the court had established two points in development of the principle laid down in Southern Pacific S. S. Co. v. Jensen, which, it will be recalled, was the case of a maritime employee injured on navigable waters of the United States.

In State Ind. Com. v. Nordenholt Corp., 259 U. S. 263, involving the case of a longshoreman injured on the dock, the court held that the contract of employment, though maritime in character, did not contemplate any dominant Federal rule concerning employers' liability in damage: and held that it made no difference whether the compensation liability was predicated upon an implied agreement of employer and employee, or otherwise, since in either case there would be no conflict with any Federal statute, and no material prejudice to any characteristic feature of the general maritime law. This in effect permitted the compensation acts to apply to injuries on shore, even though the injured persons were engaged in maritime employment.

The second point was developed through the case of Western Fuel Co. v. Garcia, 257 U. S. 233. This involved an action for damages on account of death by accident on shipboard. In its decision the court stated, "The subject is maritime and local in character, and the specified modification of or supplement to the rule applied in admiralty courts, when following the common

law, will not work material prejudice to the characteristic features of the general maritime law, nor interfere with the proper harmony and uniformity of that law in its international and interstate relations."

This rule was applied to compensation cases. In Grant Smith Porter Co. v. Rohde, 257 U. S. 469, involving an action for damages by a carpenter injured while at work on a partially completed barge lying in a navigable river, the court indicated that this was a case where the remedy under the above rule was properly under the state compensation law.

In accordance with this rule were decided the cases of

Millers Indemnity Underwriters v. Braud, 270 U. S. 59, the case of a driver killed while removing obstructions from navigable waters. Remedy declared to be under compensation law.

Alaska Packers Ass'n v. Ind. Acc. Com., 276 U. S. 467, the case of one employed by a California corporation as seaman, fisherman and for general work in and about a cannery, injured after fishing season was over, while standing upon the shore and endeavoring to push a stranded fishing boat into deep water so that it might be floated to the place where it was to be stored for winter. Award of compensation upheld.

The case of Lahti v. Terry & Tench Co., 148 N. E. 527, involved the case of an employee injured while standing on a raft in navigable waters, engaged in constructing a pier. The Industrial Commission's award of compensation was reversed by the court on the ground that the injury occurred on navigable waters of the United States. This was reversed on certiorari (269 U. S. 548, 273 U. S. 639) in accordance with Millers' Indemnity Underwriters v. Braud; but the case is somewhat different, being a non-maritime employment.

Barring these exceptions, the court has adhered to the rule that the rights of persons engaged in distinctly maritime employments and injured on navigable waters are governed by the maritime law.

Robins Dry Dock & Repair Co. v. Dahl, 266 U. S. 449
International Stevedoring Co. v. Haverty, 272 U. S. 50
Great Lakes Dredge & Docks Co. v. Kierejewski, 261 U. S. 479
Gonsalves v. Morse Dry Dock & Repair Co., 266 U. S. 171
Messel v. Foundation Co., 274 U. S. 427
Northern Coal & Dock Co. v. Strand, 278 U. S. 142
Baizley Iron Works et al v. Span, 281 U. S. 222
Employers' Liab. Assur. Corp. v. Cook, 281 U. S. 233

The same rule is applied in determining the application of the U. S. Longshoremen's & Harbor Workers' Act.

Nogueira v. N. Y., N. H. & H. R. R. Co., 281 U. S. 129

The substance of these cases appears to be as follows:

(a) Federal maritime jurisdiction does not apply to cases of injury on land, even when the employment is maritime in character, and state compensation acts are properly applied to such cases.

(b) In case of employments clearly maritime in character, where injury is sustained on navigable waters of the United States, the rights of the parties are governed generally by the maritime law and the state compensation act has no application.

(c) In case of non-maritime employments and maritime employments of such a nature that they may be regarded as local in character, and where the modification of the maritime law will not work material prejudice to the characteristic features of the general maritime law, nor interfere with the proper harmony and uniformity of that law, state compensation acts may be regarded as applicable, even though the accident occurs on navigable waters of the United States.

(d) Where the United States has enacted a law covering the rights and duties of the parties to maritime contracts and the rights and duties of parties affected by maritime torts, that law is paramount and exclusive.

It may be noted that the third rule establishes a very indefinite line, which can only be made definite by judicial decisions. The act of June 5, 1920, establishing a rule of liability in case of seamen, and the United States Longshoremen's & Harbor Workers' Compensation Act have definitely removed two extensive classes of marine cases beyond any possibility of application of the state compensation acts. The line doubtless remains of importance as defining the application of the U. S. Longshoremen's & Harbor Workers' Act, but the question as to which of two compensation acts applies is by no means so important as a fighting issue as the question of whether the remedy is by compensation or by action at law.

The cases in state and federal courts are very numerous; but in view of the paramount authority of the supreme court cases, need not be discussed. It may be noted that the tenor of the Supreme Court cases is strikingly conservative: surprisingly so in view of the liberality of that tribunal in the passing on the constitutionality of workmen's compensation acts.

Statutory treatment of the subject appears in several states.

The District of Columbia Act excepts from its act the masters or crews of vessels. These are also excepted from the U. S. Longshoremen's & Harbor Workers' Act.

Louisiana excepts from its act "the master, officers or any members of the crew of any vessel used in interstate or foreign commerce, which said vessel is not registered or enrolled in the State of Louisiana".

Maine excepts employees engaged in maritime employment or in interstate or foreign commerce who are under the exclusive jurisdiction of the maritime law of the United States.

Maryland, which defines as "extra hazardous" the operation and repair of vessels, excludes "vessels of other states or countries used in interstate or foreign commerce".

Massachusetts and Texas exclude "masters of and seamen of vessels engaged in interstate or foreign commerce".

Washington excludes masters and crews of vessels. The act applies to other maritime employments "for whom no right or obligation exists under maritime law for purposes of injury or death".

The statutory provisions regarding interstate commerce, cited under the preceding heading, sometimes are broad enough to apply to interstate or foreign commerce of maritime character. In view of the Federal decisions and legislation, they are not of practical importance.

5. *Public Employments.*

Public employments, that is to say, employments by the state or by other governmental agencies, are frequently brought specifically within the compensation laws. Unless so included, they do not ordinarily come within the general definition of "employer" and, indeed, the immunity of a sovereign state and its agencies when engaged in governmental functions, from any contract liabilities except those incurred by it under the constitution

or under statute, and from liabilities in tort except those which it assumes, prevents its inclusion in any general phrase.

There is one exception to this. Where a governmental body engages in work private in character, its governmental immunity ceases. This would not ordinarily be true of the state, but might be true of municipalities or other public corporations.

Brown v. City of Decatur, 188 Ill. App. 147
Forsythe v. Pendleton County, 266 S. W. 639 (Ky.)
Texas Employers Ins. Ass'n v. City of Tyler, 283 S. W. 929 (Tex.)
McCormick v. Kansas City, 273 Pac. 471 (Kans.)
Dunaway v. Austin Street Ry. Co., 195 S. W. 1157 (Tex.)

While as aforesaid, public employments are in most states brought within the act, there is a deal of uncertainty as to the effect of the act. Some governmental bodies are not statutory, but created by the constitution or given a constitutional status; and unless the act conforms to the constitutional provisions, it is, of course, ineffective.

Thus, a general inclusion of the state in the compensation act is not sufficient to include the Agricultural Board, or Agricultural College when those are given a separate status by the constitution.

Agler v. Michigan Agricultural College, 148 N. W. 341 (Mich.)

Thus, in Texas, the legislature has no power to make the compensation act applicable to cities and towns, or to authorize them to make insurance for their employees.

City of Tyler v. Texas Employers Ins. Ass'n, 288 S. W. 409
Georgia Casualty Co. v. Lackey, 294 S. W. 276

Thus in Georgia, the legislature has no power to make the act applicable to counties or their agencies.

Floyd County v. Scoggins, 139 S. E. 11
Murphy v. Constitution Ind. Co., 157 S. E. 471
Perdue v. Maryland Casualty Co., 160 S. E. 720

Similarly, where the compensation act is passed under a special constitutional provision, the wording of that provision may limit the application to particular governmental organizations.

Thus in New York, question has been raised as to the application of the act to governmental organizations, due to the word "business" in the amendment.

Beeman v. Board of Education, 195 App. Div. 357
Krug v. City of New York, 196 App. Div. 226

The point, however, seems very narrow, and has been overlooked in later decisions.

Bailey v. School Dist. No. 3, 204 App. Div. 125
Hughes v. City of Buffalo, 208 App. Div. 682

The point was raised in California under both the constitutional provisions empowering the enactment of a compensation law and the provisions relating to the City of Sacramento. Here, however, the court gives both provisions a liberal interpretation: particularly in respect to the word "persons", which ordinarily would seem hardly sufficient to include all the bodies to which the California Act applies.

City of Sacramento v. Ind. Acc. Com., 240 Pac. 792

Other questions arise in case of governmental bodies created by special act. As a general rule of construction, an act general in character is presumed not to modify special acts. This presumption may, of course, be overcome by evidence of the legislative intent. Whether the compensation act applies to such a body at all, or if it applies, what construction shall be given to special charter provisions inconsistent therewith, have given rise to a number of cases.

City of Superior v. Ind. Com., 152 N. W. 151 (Wis.)
McNally v. City of Saginaw, 163 N. W. 1015 (Mich.)
Millaley v. City of Grand Rapids, 203 N. W. 651 (Mich.)
Walker v. City of Port Huron, 185 N. W. 754 (Mich.)
State v. Dist. Court of St. Louis County, 158 N. W. 790 (Minn.)
Segale v. St. Paul City R. R. Co., 180 N. W. 777 (Minn.)

The inclusion often brings up questions tending to limit the application apparently intended. Where, for instance, the definition of "employee" or "employment" is limited to a trade or business carried on "for gain", there is a real question as to whether the state or any of its subordinate divisions are under the act with respect to their governmental activities, which are certainly not carried on for gain.

Thus, a city constructing a sewer is not engaged in a "gainful enterprise" within the act.

Roberts v. City of Ottawa, 165 Pac. 869 (Kans.)
Redfern v. Eby, 170 Pac. 800 (Kans.)

Thus, the janitor of a schoolhouse was held not within the act.

Ray v. School Dist. of Lincoln, 181 N. W. 140 (Neb.)

Thus, a city policeman

Rooney v. City of Omaha, 181 N. W. 143 (Neb.)

Thus, of a school teacher. In this case the act provided that hazardous employments carried on by a state, municipal corporation or other subdivision are within the act, notwithstanding the

definition. But since the list of hazardous occupations did not include school teaching, the definition of employment as a business carried on for "pecuniary gain" was held to bar compensation.

Beeman v. Board of Education, 195 App. Div. 357 (N. Y.)

Thus, the State of New York was held not engaged in business for gain while constructing a state highway.

Allen v. State, 173 App. Div. 455 (N. Y.)

But the New York Law as amended does not require a town to be engaged in a trade or business for pecuniary gain in order to be subject to the act.

Kittle v. Town of Kinderhook, 214 App. Div. 345

and in Oklahoma the point as to pecuniary gain does not appear to apply to municipalities.

Oklahoma City v. State Ind. Com., 298 Pac. 577 (Okla.)

See also

East St. Louis Board of Education v. Ind. Com., 131 N. E. 123 (Ill.)

Similarly, question has been raised as to whether governmental work is a "business" within the act.

Gray v. Board of Commissioners of Sedgwick County, 165 Pac. 867 (Kans.)
Beeman v. Board of Education, 195 App. Div. 357 (N. Y.)
Krug v. City of N. Y., 196 App. Div. 226 (N. Y.)
Robertson v. Board of Commrs. of Labette County, 252 Pac. 196 (Kans.)

On the other hand, this narrow rule was very definitely rejected in California, the case holding that a county engaging a woman to act as election inspector was engaged in "business" within the act.

Los Angeles County v. Ind. Acc. Com., 265 Pac. 362

See also

Bailey v. School Dist., 204 App. Div. 125 (N. Y.)

The question as to whether the inclusion applies to all acts of a governmental body or merely to those performed in a non-governmental character is more or less involved in the above. But in favor of the more liberal construction, see

City of Atlanta v. Hatcher, 121 S. E. 864 (Ga.)
Hughes v. City of Buffalo, 208 App. Div. 682 (N. Y.)

When governmental organizations are included within the act,

the presumption is that all provisions as to "hazardous" employments apply to them.

City of Rock Island v. Ind. Com., 122 N. E. 82
O'Brien v. Chicago City Ry. Co., 127 N. E. 389 (Ill.)
City of Chicago v. Ind. Com., 129 N. E. 112 (Ill.)
East St. Louis Bd. of Education v. Ind. Com., 131 N. E. 123 (Ill.)
Board of Education v. Ind. Com., 134 N. E. 70 (Ill.)
Gray v. Board of Commrs. of Sedgwick Co., 165 Pac. 867 (Kans.)
People Ex rel Terbush & Powell v. Dibble, 159 N. Y. S. 29, 132 N. E. 901 (N. Y.)
Ponca City v. Grimes, 288 Pac. 951 (Okla.)
Mashburn v. City of Grandfeld, 286 Pac. 789 (Okla.)
Oklahoma City v. State Ind. Com., 298 Pac. 577 (Okla.)
Bd. of Trustees v. Ind. Com., 299 Pac. 155 (Okla.)
City of Muskogee v. State Ind. Com., 300 Pac. 627 (Okla.)

Question has been raised as to whether the laws creating a statutory liability to employees of independent contractors apply to governmental bodies.

Saxe's Case, 136 N. E. 104 (Mass.)
Rader v. County Court of Roane County, 119 S. E. 479 (W. Va.)

This matter is frequently specifically covered by statute; but there is one case which, notwithstanding a statute providing that the employee of an independent contractor should not be considered an employee of the city, held such an employee entitled to compensation from the city.

City of Chicago v. Ind. Com., 129 N. E. 112

The penal liability for employing a minor without permit has also been enforced against a municipality.

Town of New Holstein v. Daun, 209 N. W. 695 (Wis.)

There are also certain statutory provisions as to the appointment and employment of public employees, such as the civil service law, which are doubtless not affected by the compensation act, and which constitute a certain limitation on the definition of "employee". A public employee must be lawfully employed in order to obtain compensation.

The tendency indicated by the above cases is to treat public employments as on the same basis as private employments: that is to say, assuming that each and every provision defining "employee" and "employment" and raising a liability of employee to employer apply to the public employers and those employees covered by the act. In some cases this is entirely proper, but the decisions which have applied the phrases "trade

or business" or "trade or business carried on for profit or gain" to public employments have worked a restriction so notable as to make the inclusions of public employments little more than a gesture. Almost none of the state's activity is carried on for gain or profit, and it cannot be strictly regarded as trade or business. It is to be taken as an instance where the practice of the courts in construing strictly all acts relating to state or municipal powers and obligations has prevailed over any tendency towards liberal construction of the compensation laws.

The extent to which public employments are covered depends also upon the terms used. The familiar rule of construction *"expressio unius est exclusio alterius"* causes specific inclusions to act automatically as exclusive of all others, and in the present case the rule is strengthened by the principle of the immunity of the sovereign. Public employments are carried on under organizations created by constitution and by statute, and the number and variety of such organizations is in some states prodigious. Consequently the formula for inclusion differs widely in the several states. Some effect a broad coverage by means of a few broadly inclusive terms; others, in particular California and Missouri, consider it necessary to make many specific inclusions.

The terms describing public employments appearing in the various acts are as follows:

(a) *"The State."*

This applies to the state organization proper, including its departments and commissions, but not its subsidiary organizations, not directly operated by the state. Even a state department recognized by the constitution may not come within the act by virtue of a general inclusion of the state.

Agler v. Michigan Agricultural College, 148 N. W. 341 (Mich.)

(b) *General Terms.*

Political subdivisions is a term broad enough to cover any division which the state sees fit to make of its governmental power, whether to corporations, public or quasi-public, or to unincorporated agencies.

Political subdivisions of counties are referred to in Oregon; *of municipalities* in Kentucky and New York. Towns are in some states treated as political subdivisions of counties, otherwise

these more limited terms would appear to refer to allotments of governmental duties and functions among districts or agencies. A road district has been held to come within the terms in Louisiana.

Hicks v. Parish of Union, 6 La. App. 543
See also Bettencourt v. Ind. Acc. Com., 166 Pac. 323 Cal.

Public Corporations refers to corporate bodies devoted exclusively to the public interest wherein the entire proprietary interest is in the state or other governing body. The term includes municipal corporations and other corporations of a public character.

Bouvier's Law Dictionary, title "Corporations"

It does not include an unincorporated agency.

Bettencourt v. Ind. Acc. Com., cited above
State v. State Ind. Board, 286 Pac. 408 (Mont.)

Quasi-public corporations or as in Delaware, *corporations public quasi,* refers to corporations wherein the proprietary interest is private but which are charged with public duties or vested with special powers in excess of those granted private corporations. In general, public service corporations.

Bouvier's Law Dictionary, title "Quasi-Public Corporations"

Municipal Corporations refers to a public corporation created by the state consisting of the inhabitants of a particular district, empowered to conduct local affairs of government and to exercise a limited power of local legislation. The term includes cities, and also incorporated counties, towns and villages; but does not refer to counties, towns and villages when unincorporated.

Bouvier's Law Dictionary, title "Municipal Corporations"
Dillon on Municipal Corporations, sec. 32

Municipality and *municipal work* (used in Kentucky) probably mean the same thing. *Municipality,* however, properly refers to the municipal organization rather than to the corporation.

Bouvier's Law Dictionary, title "Municipality"

Municipality or *municipal corporation* do not include associations.

Canadian County v. Burgess, 5 Pac. 2nd 752 (Okla.)

Quasi-municipal corporations appears in the law of Maine, referring to unincorporated districts. The term is applied to counties, towns or districts not incorporated.

Bouvier's Law Dictionary, title "Municipal Corporations"

Body Politic appears in the law of Illinois. It appears broad enough to include any incorporated body of persons, from the state itself down to private corporations.

State Agencies and *Public Agencies* used in the California law and *governmental agencies* used in Nebraska, Pennsylvania and West Virginia, are terms of magnificent breadth, sufficient to include any organization for carrying on governmental work, corporate or unincorporate.

See Nebraska National Guard v. Morgan, 199 N. W. 557 (Neb.)
Bettencourt v. Ind. Acc. Com., cited above
Rusk Farm Drainage District v. Ind. Com., 202 N. W. 204 (Wis.)

(c) *Specific Terms.*

Counties—A county is a civil division of the state, made for judicial and political purposes. It is primarily an instrument of the state, rather than of local self-government. In some states it ranks as a public or municipal corporation; elsewhere it is not incorporated and ranks as a "political subdivision."

Bouvier's Law Dictionary, title "County"

City and County—A body exercising both county and municipal functions. It appears in the laws of California, Nevada and Montana. In California the term includes Los Angeles and San Francisco.

It is to be suspected it came into the laws of the other states by the copying process.

City—A city is a municipal corporation, incorporated either by special legislative charter or under the terms of a general law. In New England is a real line of cleavage between cities and towns, based on the distinction between direct and representative government. The line of distinction elsewhere is by no means so clear. In some states a city is merely a big town, distinguished by title or by a different statutory treatment based on size and population.

Dillon on Municipal Corporations, sec. 32, note

These are specified in the laws of Idaho and Missouri.

Cities under Special Charter—The term "city" seems broad enough to cover cities under special charter and cities under general laws. The specification is perhaps designed to avoid any presumptions that the compensation act did not modify the terms

of a special act. Special provisions of city charters have on occasion, as previously noted, figured in compensation litigation.

Cities under Commission Form of Government—Specified also in Idaho and Missouri. Possibly under the impression that a city under commission form of government is a hybrid organization. Generally, the term "city" would appear inclusive of a city under commission form of government.

Town—A town when incorporated ranks as a municipal corporation, and is such generally in New England, and frequently elsewhere. But it is sometimes no more than a subdivision of a county ranking as a quasi-corporation or a political subdivision.

Township—Is used in a number of laws. In some states "township" is used as "town" is used elsewhere. But under the Acts of Congress it refers to a subdivision of public land.

See Bouvier's Law Dictionary, title "Town," "Township"
Hop v. Brink, 217 N. W. 551 (Iowa)

Village—Appears in a number of laws, some of which specify "Incorporated village". The term means properly an assembly of houses; but under the laws of some states villages are incorporated and rank as municipal corporations. Elsewhere they are quasi-corporations or political subdivisions.

Bouvier's Law Dictionary, title "Village"

Borough—Appears only in the laws of Minnesota. The term is used in Pennsylvania, Connecticut and New Jersey to designate a political subdivision organized for municipal purposes.

Bouvier's Law Dictionary, title "Borough"

Parish—Peculiar to Louisiana, where it refers to a political division similar to a county.

District—Appears rather frequently in the laws. Massachusetts (districts having the power of taxation), Washington (other taxing districts), and California and Montana (all other districts) cover districts generally. Elsewhere they are included specifically. School districts occur frequently in the laws; less frequently irrigation districts, drainage districts, sewer districts, highway and road districts, water districts, swamp districts, levy districts and "conservancy" districts.

Districts are political subdivisions of a state, county or municipality, created for particular purposes and exercising limited gov-

ernmental powers, notably powers of taxation. Districts have figured in several compensation cases.

In California, the words "school districts and all public corporations therein" were found too narrow to include a reclamation district, the court holding it not a corporation, but a governmental mandatory or agent.

Bettencourt v. Ind. Acc. Com., 166 Pac. 323

In Wisconsin, a drainage district was held, not a corporation, but a governmental agency, and not within the terms of the act.

Rusk Farm Drainage District v. Ind. Com., 202 N. W. 204

In Louisiana a road district was held to come within the term "political subdivision".

Hicks v. Parish of Union, 6 La. App. 543

(d) *Other Terms Occasionally Used*

State Department (Kentucky, Oregon, West Virginia)

Probably not necessary if the state is included, save in the exceptional case presented in Agler v. Michigan State Agricultural College, 148 N. W. 341.

Otherwise an employee of a department or commission would be an employee of the state.

Smith v. State Highway Com., 109 S. E. 312 (Va.)
Dept. of Game & Inland Fisheries v. Joyce, 136 S. E. 651 (Va.)

Boards (Missouri and New Jersey) and *Administrative Boards* (Colorado and New Mexico) may have reason for being if the law does not contain some broadly inclusive phrases such as "public agency" or "political subdivision".

Huseth v. State, 229 N. W. 560

Public Institutions (Colorado, New Mexico) see Peck's Case, 145 N. E. 532.

School Boards (Missouri).

Boards of Education (Missouri, New Jersey)

Regents (Missouri)

Curators (Missouri)

Managers (Missouri)

Control Commissions (Missouri)

Commissions (New Jersey)

Other Governing Boards (New Jersey)

Other Public Employees (Minnesota)

need no discussion.

The number of terms used is sufficient indication that the terms of an act must be scanned with great care; and the varying meanings for some of the terms point a warning against assuming too quickly that such terms if not specifically included can be brought within the meaning of more general terms.

6. *Employments within the Jurisdiction of Another State.*

A state's jurisdiction goes no further than its own bounds. Within those bounds it may, within the limits of the constitution, regulate the relation of employer and employee so long as both are within its jurisdiction. As regards contracts made within its bounds, it may, within constitutional limits, impress upon them such incidents as it sees fit, and may therefore ordain that its compensation law shall govern the rights and duties of the parties wherever it is to be performed.

This is subject, however, to a limitation. Other states have exactly the same rights, and when both employer and employee come within their jurisdiction are not necessarily bound by the act of the state where the contract was made. If both states insist on their full rights, an employee may have a double right to compensation: a right under the law of the state where he is, and a right under the law of the state where the contract was made.

What the state can do and what the state actually does are, of course, two very different things. It is common enough for a state to provide for the contingency that a contract made within the state may be partly performed outside. It is less common to attempt to cause the state law to follow the contract in cases where the work is wholly to be performed outside the state. Likewise, where the law of a state is elective, there is a certain practical difficulty in applying it to contracts made outside the state. No conclusive presumptions that the parties have accepted the state law can be raised as to such a contract. This difficulty does not, of course, arise when the law is compulsory.

Darsch v. Thearle Duffield Fire Works Display Co., 133 N. E. 525 (Ind.)

Barnhart v. American Concrete Steel Co., 125 N. E. 675 (N. Y.)

The cases therefore exhibit some variety in results.

In case of a contract made within the state to be performed

wholly within the state, there is, of course, every reason why the state act should apply.

In case of a contract made within the state, which is to be performed or which is performed partly outside the state, the general tendency is to grant compensation, under the state law providing the law permits the commission to take cognizance of injury sustained outside the state.

Ind. Com. v. Aetna Life Ins. Co., 174 Pac. 589 (Colo.)
Jenkins v. T. Hogan & Sons, 177 App. Div. 36 (N. Y.)
Hagenbach v. Leppert, 117 N. E. 531 (Ind.)
Pierce v. Bekins Van & Storage Co., 172 N. W. 191 (Iowa)
Crane v. Leonard, Crossette & Riley, 183 N. W. 204 (Mich.)
State v. Dist. Court Hennepin Co., 166 N. W. 185 (Minn.)
State v. Dist. Court, Rice County, 168 N. W. 177 (Minn.)
Stansberry v. Monitor Stove Co., 183 N. W. 977 (Minn.)
Madderns v. Fox Film Company, 143 N. E. 764 (N. Y.)
Holmes v. Communipaw Steel Co., 186 App. Div. 645 (N. Y.)
Grinnell v. Wilkinson, 98 Atl. 103 (R. I.)
Smith v. Van Noy Interstate Co., 262 S. W. 1048 (Tenn.)
Pickering v. Ind. Com., 201 Pac. 1029 (Utah)
Foughty v. Ott, 92 S. E. 143 (W. Va.)
Anderson v. Miller Scrap Iron Co., 170 N. W. 275; 171 N. W. 935 (Wis.)

In Anderson v. Jarret Chambers Co., 210 App. Div. 543 (N. Y.) the compensation was refused, there being no evidence that the defendant was transacting in New York a business that brought him within the New York law.

In case of a contract made within the state which is to be performed or which is performed wholly outside the state, the prevailing tendency is to grant compensation.

Globe Cotton Oil Mills Co. v. Ind. Acc. Com., 221 Pac. 658 (Cal.)
Empire Glass & Decorating Co. v. Bussey, 126 S. E. 912 (Ga.)
Hulswit v. Escanaba Mfg. Co., 188 N. W. 411 (Mich.)
McGuire v. Phelan Shirly Co., 197 N. W. 615 (Neb.)

In Perlis v. Lederer, 189 App. Div. 425 (N. Y.) compensation was refused.

In Mitchell v. St. Louis Smelting & Ref. Co., 215 S. W. 506 (Mo.), the court held a suit for liability barred because the parties contracted with understanding that laws of place where contract was to be performed should govern.

In Pettiti v. T. J. Pardy Co., 130 Atl. 70 (Conn.) the grant was on the basis that the parties had contracted with regard to the Connecticut Law.

In case of a contract made outside the state to be performed wholly within the state, the presumption is that they contracted

with regard to the law of the place of performance, and compensation should be allowed.

Douthwright v. Champlin, 100 Atl. 97 (Conn.) (But here parties had accepted Connecticut Act.)
Banks v. Howlett Co., 102 Atl. 822 (Conn.)
Johns Manville v. Thrane, 141 N. E. 229 (Ind.)

In case of a contract made outside the state to be performed or actually performed only in part within the state, the tendency is to refuse compensation. Cases where compensation has been granted:

Carl Hagenbach & Great Wallace Show Co. v. Randall, 126 N. E. 501 (Ind.)
Carl Hagenbach & Great Wallace Show Co. v. Ball, 126 N. E. 504 (Ind.)
Smith v. Heine Safety Boiler Company, 112 A. 516 (Me.)

Cases where compensation was refused:

Hall v. Ind. Com., 235 Pac. 1073 (Colo.)
Hopkins v. Matchless Metal Polish Co., 121 Atl. 828 (Conn.)
Darsch v. Thearle-Duffield Fire Works Display Co., 133 N. E. 525 (Ind.)
Barnhart v. Am. Concrete Steel Co., 125 N. E. 675 (N. Y.) (Here compensation was granted but according to the law of the state where the contract was made.)

The case of Farr v. Babcock Lumber & Land Co., 109 S. E. 833 is probably an exception. Here a liability suit was allowed in spite of the Tennessee compensation law, the place where contract was made, on account of derelictions from duty committed in North Carolina.

In case of a contract made and performed outside the state, compensation is naturally refused.

Thompson v. Foundation Co., 188 App. Div. 506 (N. Y.)
Hamm v. Rockwood Sprinkler Co., 97 Atl. 730 (N. J.)
Baggs v. Standard Oil Co., 180 N. Y. S. 560

Actions for liability are likewise denied if they would be barred by compensation act of state where contract was made and to be performed.

Proich v. N. Y. C. & H. R. R. Co., 183 N. Y. S. 77 (N. Y.)
Harbis v. Cudahy Packing Co., 241 S. W. 960 (Mo.)
Verdicchio v. McNab & Hurlin Mfg. Co., 178 App. Div. 48 (N. Y.)

But not where there is no evidence of a remedy by way of compensation in any other state.

Simpson v. Atlantic Coast Shipping Co., 134 N. E. 560 (N. Y.)

Cases where right to compensation has been recognized in spite of a right to or recovery of compensation under another act.

Gilbert v. Des Lauriers Column Mould Co., 180 App. Div. 59 (N. Y.)
Anderson v. Jarrett Chambers Co., 210 App. Div. 543 (N. Y.)
Pickering v. Ind. Co., 201 Pac. 1029 (Utah)

Apart from statutory provisions, it would seem proper to give effect to the intent of the parties in such cases as to what law should govern. If this intent is not expressed in the contract, the inference would be that they intended the law of the place where the contract was made, where the parties were both residents of the state and contracted with regard to employment wholly or in part within the state, or with regard to employment ambulatory in character, not to be performed in any one state. The presumption is slightly weakened when the parties are residents of different states. With regard to contracts wholly to be performed in another state, the law of the place of performance would be presumed, and this would be strengthened if the employee were a resident of that state.

E. *Other Employments Expressly Excepted.*

The exceptions heretofore discussed have been those arising from the operation of a rule of law, or by statute enacted in consequence of such rule. Those embraced under this heading are exceptions made as pure matter of state policy.

The constitutional principle of "equal protection of the laws" acts as a certain restraint upon the states in enacting compensation laws applicable to some employers and not to others. But the courts permit the states broad powers of classification, and are disinclined to declare a classification unconstitutional unless it is clearly arbitrary and unreasonable.

1. *Farm Labor.*

Most compensation acts contain some form of exemption of farming as an employment, farmers as employers or farm laborers as employees. Connecticut and New Jersey do not make this exception.

Massie v. Ct. of Common Pleas, 151 Atl. 205, 156 Atl. 377 (N. J.)

The form in which the exception appears varies not a little. As above indicated, it may apply to the employment, the employer or the employee. "Farming", "farmers" and "farm laborers" are perhaps the most common terms, though "agriculture" or (in Illinois) the "tilling of the soil" are also used. To the general terms are sometimes added specific terms such as "horticulture", "viticulture", "dairying", "ranch labor", "stock raising" and

"poultry raising". All of these are operations which might be carried on in regular farming operations, and might be included in the more general terms, even if carried on as an exclusive specialty.

Beyer v. Decker, 150 Atl. 804 (Md.)
Gordon v. Buster, 257 S. W. 220 (Tex.) (ranch laborer)
Davis v. Ind. Com., 206 Pac. 267 (Utah) (sheep herder)
Fleckles v. Hille, 149 N. E. 915 (Ind.) (poultry farm employee)
Greischar v. St. Mary's College, 222 N. W. 525 (Minn.) (dairy farm employee)
Georgia Cas. Co. v. Hill, 30 S. W. 2nd 1055 (Tex.) (nurseryman's employee taking heifer to be bred)
Robinet v. Hawk, 252 Pac. 1045 (Cal.) (driver of ranch wagon)

Farming comprehends a wide variety of activities. In olden times, the farm constituted a little industrial center where in addition to regular agricultural operations many domestic arts and trades were carried on. The varied industries of New England were in many cases built up by men who had learned the rudiments of the art on the farm. Spinning and weaving, shoemaking, butchering, smoking and preserving of meat, drying and preserving of fruits and vegetables, harnessmaking, making of agricultural implements are all very proximately derived from farm industries. Separated from the farm and carried on independently, they have, of course, but little reminiscence of their origin.

The process of separation is still going on, and a series of mechanical trades and operations closely connected with farming, but carried on independently are growing up: such as threshing operations, corn husking, corn shredding and the like. Hence, there is an uncertain and debatable ground in the application of the general exception: both as to what constitutes a farmer and as to what constitutes a farm laborer.

(a) "Farming" may be taken to have reference to the cultivation of land for the production of agricultural crops with "incidental enterprises."

Pridgen v. Murphy, 160 S. E. 701 (Ga.)

"Farm labor," to labor engaged in the production of "hay, grain, vegetables, etc., from the soil".

Krobitzsch v. Ind. Acc. Com., 185 Pac. 396

Thus in the one case the court declined to extend the exception to cover the turpentine business; in the other to cover the opera-

tions of a fish hatching business. This latter industry the court declared was not brought within the exception of "stock raising" which referred to the breeding of domestic animals.

(b) The exception does not necessarily cover all business carried on by a farmer.

Marietta v. Quayle, 137 N. E. 61 (Ind.)

Thus, in case of coal mining operations

Hanna v. Warren, 133 N. E. 9 (Ind.)

Saw mill operations

Peterson v. Ind. Com., 146 N. E. 146 (Ill.)
Durrin v. Meehl, 204 N. W. 22 (Minn.)
Farrin v. State Ind. Com., 205 Pac. 984 (Ore.)
Freeman v. Ind. Acc. Com., 241 Pac. 385 (Ore.)

Lumber operations not connected with farm.

Strunk v. Keller, 75 Pa. Super. Ct. 462

House moving operations.

Vandervort v. Ind. Com., 234 N. W. 492 (Wis.)
Sturman v. Ind. Com., 234 N. W. 496 (Wis.)

(c) Nor does it necessarily cover all employees employed by a farmer. While anyone employed on work properly incidental to the farm is doubtless a farm laborer although the work taken by itself is not characteristically farming, the tendency is to regard work outside the regular course of farm work as not within the exception. Thus one employed to drill and blast holes, in preparation for planting trees and vines, was held not within the exception.

Helmuth v. Ind. Acc. Com., 210 Pac. 428 (Cal.)

Thus of one employed to poison prairie dogs.

C. C. Slaughter Cattle Co. v. Pastrana, 217 S. W. 749 (Tex.)

As to those engaged in construction and repair of buildings, they were held not within the exception in

Miller & Lux v. Ind. Acc. Com., 162 Pac. 651 (Cal.)
Peterson v. Farmer's State Bank of Eyota, 230 N. W. 124 (Minn.)

Held within the exception in

Uphoff v. Ind. Bd., 111 N. E. 128 (Ill.) (But the provisions of the Illinois Law seem to require this.)
Coleman v. Bartholomew, 175 App. Div. 122 (N. Y.)
Anderson v. Last Chance Ranch Co., 228 Pac. 184 (Utah)

The rule is laid down in Peterson v. Farmer's State Bank of Eyota, that neither the task on which the employee is engaged

when injured nor the place of performance determine whether he is a farm laborer; but the whole character of the employment must be considered.

(d) The exception may cover farming operations carried on by those engaged in other business and also their employees while actually engaged in farming operations. See

Seggebruch v. Ind. Com., 123 N. E. 276 (Ill.)
Shafer v. Parke Davis & Co., 159 N. W. 304 (Mich.)
Bates v. Shaffer, 185 N. W. 779 (Mich.)
C. C. Slaughter Cattle Co. v. Pastrana, 217 S. W. 749 (Tex.)
Dowery v. State, 149 N. E. 922 (Ind.)
Ocean Acc. & Guar. Corp. v. Ind. Com., 256 Pac. 405 (Utah)
Greischar v. St. Mary's College, 222 N. W. 525 (Minn.)

But there is a point where the connection with farming is too casual to come within the exception.

Thus in case of one clearing land, used by employer as a summer resort.

Klein v. McCleary, 192 N. W. 106 (Minn.)

One pruning trees on farm bought for improvement and sale

O'Dell v. Bowman, 189 App. Div. 386 (N. Y.)

Coal yard employee temporarily assisting workers on employer's farm

Matis v. Schaeffer, 113 Atl. 64 (Pa.)

Teamster injured in caring for horses in barn of employer not operating farm

Carroll v. General Necessities Corp., 207 N. W. 831 (Mich.)

Employee doing both industrial and farm work but injured while doing industrial work

Austin v. Leonard, Crossett & Riley, 225 N. W. 428 (Minn.)

One injured while spraying chickenhouse of retired business man living within city limits.

Adams v. Ross, 230 App. Div. 216 (N. Y.)

There is on record a case in California, where a janitor and caretaker was held a farm laborer and denied compensation because injured while pruning a fig tree to admit more light to the apartment. The findings the court allowed to stand

George v. Ind. Acc. Com., 174 Pac. 653 (Cal.)

See also

Kramer v. Ind. Acc. Com., 161 Pac. 278 (Cal.)

But in a later case (La Coe v. Ind. Acc. Com., 293 Pac. 669) where a different result was reached under an amendment to the California statute, the court indicated that the spirit of the act did not encourage forced constructions in order to bring a case within the exception.

(e) Operations collateral to farming, particularly operations involving the use of machinery have to a degree been recognized in the statutes.

The Arizona Act excepts agricultural workers "not employed in the use of machinery".

The Illinois Act extends the exception to a number of extra hazardous operations carried on by farmers or on a farm or country place.

Kentucky includes in the exception of agriculture the operation of threshing machines.

Maryland includes in the exception "any agricultural service including the threshing or harvesting of crops" whether carried on by the farmer or his contractor.

Minnesota stipulates that the term applies to farmers doing their own work in threshing grain, shredding or shelling corn, barley, hay or straw, but not to such operations performed by commercial threshmen or commercial balers.

Walker v. Wading, 230 N. W. 274 (Minn.)

New York extends the exception to persons employed either by direct employment or by contracting in logging or wood cutting operations conducted by a farmer on his own farm, consisting of felling timber, cutting it into dimension length, and hauling it to market or to transportation ports, provided not more than four persons are so employed at any one time by such farmer, and provided that the exception does not extend to the sawing of timber or wood.

North Carolina excepts those engaged in selling agricultural products for the producers, provided the product is prepared for sale by the producers.

Oklahoma extends its exception to farm buildings and farm improvements.

South Dakota excludes from the exception the operation of threshing machines, tractor engines and separators.

The mechanical operations mentioned in these citations have figured in a number of cases.

Threshing when performed by a farmer himself is undoubtedly farm labor, and his employees come within the exception.

Hill v. Ind. Com., 178 N. E. 905 (Ill.)

This principle has been extended to cases where farmers combine to purchase a threshing machine even when they do work for others.

Keefover v. Vasey, 199 N. W. 799 (Neb.)
Jones v. Ind. Com., 187 Pac. 833 (Utah)

But as to employees of threshing outfits moving from place to place, there are a number of cases holding them not within the exception.

Industrial Com. v. Shadowen, 187 Pac. 926 (Colo.)
White v. Loades, 178 App. Div. 236 (N. Y.)
Vincent v. Taylor Bros., 180 App. Div. 818 (N. Y.)
In re Boyer, 117 N. E. 507 (Ind.)
Hoshiko v. Ind. Com., 266 Pac. 1114 (Colo.)

In the following cases they were held within the exception:

Cook v. Massey, 220 Pac. 1088 (Idaho)
State v. Dist. Court of Watonwan County, 168 N. W. 130 (Minn.)
(But see statute cited above.)

Corn shredders employed by commercial outfit held not within exception.

Boyer v. Boyer, 227 N. W. 661 (Minn.)

Held within exception.

Slycord v. Horn, 162 N. W. 249 (Iowa)

See also

Hillman v. Eighmy, 208 N. W. 928 (Wis.)

Employee of commercial corn husking outfit held within exception.

Roush v. Heffelblower, 196 N. W. 185 (Mich.)

Tractor driver plowing land of another under employer's direction, held entitled to compensation.

Heal v. Adams, 221 N. W. 389 (Wis.)

One employed on steam dredge in drainage operation held not within exception.

Daily v. Barr, 196 N. W. 266 (Minn.)

Employee of plumber engaged to construct windmill head for farmer held not within exception.

Marever v. Marlin, 174 N. E. 517 (Ind.)

There is, therefore, some tendency apart from statute to construe the exceptions as not applying to operations incidental to farming carried on by commercial contractors, though as indicated above some acts expressly include contractors. That the exception was not generally intended to include hazardous operations involving the use of machinery and carried on by those who specialize in such operations and have no general connection with agriculture otherwise may be taken for granted.

2. *Domestic Servants.*

Exception of domestic servants is very commonly made. The phraseology used includes "domestic servants", "private domestic servants", "household domestic servants", "domestic employment", "domestic service", "household domestic service".

The Missouri Act excludes "domestic servants including family chauffeurs." The New York Act excludes "domestic servants" from the definition of "Employee" and excludes "domestic servants other than private or domestic chauffeurs employed as such in cities of two million inhabitants or over" from the 18th group of "hazardous" employments.

The exception has entered but seldom into litigation. The exception clearly applies to those employed in the home,—not to persons doing maid's work in a sanitarium or hotel.

Gernhardt v. Ind. Acc. Com., 185 Pac. 307 (Cal.)
Barres v. Watterson Hotel Co., 244 S. W. 308 (Ky.)

The exception covers all engaged exclusively in the care of the home. It is not necessary that they reside in the home. Thus it applies to a caretaker, living in a separate cabin.

Eichholz v. Shaft, 208 N. W. 18 (Mich.)

Also may be cited

Lamar v. Collins, 252 Ill. App. 238
Murray v. Strike, 287 Pac. 922 (Utah)

The latter case covers merely the common law rights of action of an injured domestic.

3. *Irregular Employments.*

These are excepted by most states. Employments excepted fall in two categories: (a) Employments which are casual; (b) Employments not in the usual course of the trade, business, profession or occupation of the employer. While many employments coming within one category fall also within the other, the two are not identical, though the acts of both Tennessee and Montana treat them as synonymous.

The first category is generally described as above. The phrases "employments which are but casual", "purely casual", or "merely casual" add little, if anything, to the meaning. Casual employment is defined in the law of Nebraska as meaning "occasional, coming at certain times without regularity in distinction from stated or regular". New Jersey defines it more elaborately "If in connection with the employee's business, as employment the occasion for which arises by chance or is purely accidental, or if not in connection with any business of the employer, as employment not regular, periodic or recurring." Either definition gives a fair idea of the meaning of the term. California and Nevada add a concrete test, limiting the term to employments where the work is to be completed in not exceeding ten working days, without regard to the number of employees and where the total labor cost is less than $100. Missouri provides that one who is employed by the same employer for more than 5½ consecutive working days shall be considered a regular and not a casual employee.

The second category is most commonly described as above, but also as employments "not for the purposes of the employee's trade or business" or "not incidental to the operation of the usual business of the employee". The difference in meaning between the several forms is probably not great.

California defines "course of trade, business, profession or occupation" as including "all services tending towards preservation, maintenance or operation of business, business premises or business property of employer". And defines "trade, business, profession or occupation" as including "any undertaking actually engaged in by him with some degree of regularity".

Apart from variation in phraseology and those caused by definitions, the forms of the exception fall into four classes:

(a) Those excepting only casual employments. Idaho.

(b) Those excepting only employments not in the usual course of the trade, business, profession or occupation. Georgia, Illinois, Louisiana, Maine, South Dakota, Texas and Wisconsin. Owing to the definition of "casual employment" alluded to above, Montana and Tennessee belong in this group, and possibly Virginia as well.

(c) Those excepting employments which are casual *or* not in the usual course of trade, business, profession or occupation. Hawaii, Missouri.

(d) Those excepting employments which are casual *and* not in the usual course of trade, business, profession or occupation. Alabama, Arizona, Colorado, Delaware, District of Columbia, Iowa, Minnesota, Montana, Nebraska, North Carolina, Wyoming.

California, Indiana and Nevada use the formula "both casual and". Connecticut, Rhode Island and Vermont use a slightly different formula, but belong in this group.

Since the two categories are not identical, it is obvious that group (c), which excludes employments coming within either category is the broadest: and that group (d) which excludes only employments coming within both categories is the narrowest. The difference is not great, but great enough to make some difference in the results.

Roman Catholic Archbishop of San Francisco v. Ind. Acc. Com., 230 Pac. 1 (Cal.)
Herbig v. Walton Auto Co., 182 N. W. 204 (Iowa)
Charles v. Harriman, 118 Atl. 417 (Me.)

The decisions, therefore, cannot be profitably reviewed in detail since they depend to some extent on the nature of the specific exemption.

It may be noted that the application of the exemption depends, not on the nature of the work performed, but on the nature of the contract of employment.

Western Union Tel. Co. v. Hickman, 248 Fed. 899 (W. Va.)

The Nebraska definition of "casual" appears to be taken bodily from "Words and Phrases" first series, which gives as antonyms, "regular, systematic, periodic and certain".

Porter v. Mapleton Electric Light Co., 183 N. W. 803 (Iowa)

Thus, an employment may be removed from the category of "casual" by any circumstance which imparts a degree of regularity and certainty, though the work itself may have an element of uncertainty. If, for instance, an employment is to make repairs when needed, or to do hauling when required, the arrangement being of a standing character, it is not casual. If there is no such arrangement, but the employee is called in from time to time as need arises, this employment may be casual. Job work is frequently casual in character, especially when the job is in its nature brief and transitory; but employment for a job of substantial duration is not casual. As to what constitutes employment in the usual course of the trade, business, profession or occupation, the decisions show no little variance. Generally the tendency may be said to be in the direction of not splitting hairs to bring a case within the exception.

4. *Employments Involving Less Than a Stated Number of Employees.*

While the compensation acts frequently cover small employers, they were primarily designed for large employers.

Kloman v. Ind. Com., 195 N. W. 404 (Wis.)

This fact, and the difficulty of applying the act to the smaller units of industry has caused most states to set up something in the nature of a minimum limit. Such a limit is not at all necessary, nor is it always present. Compulsory acts are sometimes applied irrespective of the number of employees. Provisions adopted may be in the form of a direct exception or by limitation of the definition of "employment" or "employee".

The minimum number of employees varies, running from 1 to 16. Reference is usually made in one way or another to employees "regularly" employed. Sometimes a further limitation is introduced, such as "employed or regularly engaged in the same business or occupation" or "about the same place of employment". In some cases employment of the minimum number for a definite statutory period is required. Considering the number of provisions, and the opportunities for questions, the amount of litigation under these exceptions is relatively small.

One of these limitations (which was introduced, however, for the purpose of broadening the compulsory feature of the law)

went to the Supreme Court of the United States. The earlier decisions on compulsory compensation acts laid some stress upon the inherent hazard as justifying the legislature in making its law compulsory as to classes of hazardous employments. New York ultimately broadened its list of hazardous classifications by adding a class of employers regularly employing four or more workmen or operatives. This, the Supreme Court, in the case of Ward & Gow v. Krinsky, 259 U. S. 503 held constitutional, indicating that the fact that an accident had occurred showed there was an inherent hazard. Since this reasoning would justify any conceivable classification, it may be taken that the states have apparent authority to make their acts compulsory to any desired degree.

This New York provision has led to several interesting decisions, turning on the words "workman" and "operative" already discussed. It is an odd situation where the compensation act is applicable to a large orchestra merely because it employs four stage hands.

Europe v. Addison Amusements, 131 N. E. 750

and where the act does not apply to a large brokerage establishment, since its clerks, stenographers, telegraph operators, porters and messengers are not workmen or operatives.

Westbay v. Curtis & Sanger, 198 App. Div. 25

and yet does apply to a news company, because of its newsboys,

Ray v. Union News Co., 198 App. Div. 149

and to a delicatessen store because of its cook, waiter, general utility man and counterman.

Jurman v. Hebrew Nat'l Sausage Factory, 198 App. Div. 456

Later the court reverted to the more strict construction, by declaring a salesman not a workman, even though he had to open boxes and stock merchandise on the shelves.

Cohen v. Rosalsky, 230 App. Div. 604

To return to the exceptions under consideration, what is meant by "regularly employed" depends on the established mode or plan used in conducting business. Thus it was held, in a case under the Alabama law, that checkers employed by a steamship company were "regularly" employed, although they did not work continuously or at required periods, but only when a steamship

came to dock, and although the personnel of the force varied from time to time.

Mobile Liners v. McConnell, 126 S. 626

Similarly, the Utah court declined to recognize men and boys permitted to wait at taxi stands and occasionally as volunteers driving taxis to meet an unusual demand, as employees within the statutory provision limiting the act to employers of three employees.

Rockefeller v. Ind. Com., 197 Pac. 1038

In the absence of a requirement as to regularity of employment, the statute is satisfied if at the time of accident the employer was in employ of the statutory member, even if two are but temporary employees, drafted to meet an emergency.

Shockley v. King, 117 Atl. 280 (Del.)

In the absence of restricting words, the statutory limit is complied with, although the required number of employees were not working at the place of injury or on the same job.

Colbourn v. Nichols, 109 Atl. 882 (Del.)
Vantrease v. Smith, 227 S. W. 1023 (Tenn.)

Where the statute prescribes that they shall be employed "in or about the same place of employment" or "in the same business or occupation", the reference is to the business of the employer rather than to the particular work of the employee.

Reliance Coal & Coke Co. v. Smith, 266 S. W. 1094 (Ky.)

And the fact that the injured workman was engaged in a distinct activity (silica mining) in which less than the statutory number were employed, is immaterial where this is carried on in close connection with a larger activity (brick making) where more than the required number are employed.

Ind. Com. v. Funk, 191 Pac. 125 (Colo.)

Under the Connecticut act, where a statutory time limit appears, there are two cases indicating that the application of the limitation depends upon the number of men regularly employed throughout the period; and that the average daily number of employees, the existence of a definite quota or standard number of them, or the total number entering and leaving employment during the period have no bearing on the matter.

Schneider v. Raymond, 130 Atl. 73
Sorrentino v. Cersosimo, 130 Atl. 672
See also Stover v. Davis, 205 Pac. 605 (Kans.)

To satisfy the requirement, it is permissible to count only those employed by the employer in the same capacity in which he employed the person injured. Thus, where a plumber employed personally less than the statutory number, a claimant was not permitted to count employees in a partnership of which the plumber was a member.

Coady v. Igo, 98 Atl. 328 (Conn.)

The operation of the exemption is, of course, to leave the employer free to elect to come under the act or to stay out. If he is without the act, he cannot plead the act in bar to a suit for damages.

Dillard v. Justus, 3 S. W. 2nd 392 (Mo.)

If he is within the terms of the act, however, and fails to elect, he is liable in damages on mere proof of negligence.

Thorne v. F. C. Johnson Co., 111 Atl. 410 (Me.)

For other cases see:

Ind. Com. v. Hammond, 236 Pac. 1006 (Colo.)
Hollingsworth v. Barney, 192 Pac. 763 (Kans.)
McMillan v. Ellis, 192 Pac. 744 (Kans.)
Southwestern Grocery Co. v. State Ind. Com., 205 Pac. 929 (Okla.)
Pine v. State Ind. Com., 235 Pac. 617 (Okla.)
La Croix v. Frechette, 145 Atl. 314 (R. I.)

5. *Outworkers.*

Outworkers are excepted by the acts of Connecticut, Delaware, Idaho, Missouri, Nebraska and Pennsylvania.

The Idaho law specifies merely "outworkers". The other laws set forth the exceptions at more length. The Pennsylvania law, for instance, excepts "persons to whom articles or materials are given out to be made up, cleaned, washed, altered, ornamented, finished or repaired or adapted for sale, in the worker's own home, or on premises not under the control or management of the employer". The other laws describe the exception in much the same way.

An outworker may be an employee, or under some circumstances an independent contractor. He is to but a limited extent under the control of the employer, and not at all so during working hours. The reason for excepting outworkers is based partly on the fact that he is not subject to hazards inherent in the business of the employer except during such times as he is

on the employer's premises, and is therefore not within the reason that lies at the base of the compensation acts. The risk cannot be reduced as to him by any manner of safety engineering and the audit of payroll in case of workers paid by the piece is attended with some difficulty. On the other hand, to except them from the act affords a facile means of avoiding the act, thus encouraging a type of industry which has in some cases led to grave social evils. The question as to whether outworkers are employees has been litigated, but there seem to be few if any cases touching the exceptions.

6. *Persons Receiving More Than a Certain Amount per Year.*

Such exceptions are made in a number of states. The theory appears to be that the act is properly for the protection of the lower-paid workers, and not of those able to look after their own interests.

Arizona excepts public officials receiving more than $2,400 per annum. Hawaii excepts public officials receiving more than $1,800 per annum. Idaho excepts employees whose remuneration exceeds $2,400 per annum. Missouri excepts employees whose average annual earnings exceed $3,600. New Jersey excepts public employees receiving more than $1,200 per annum. Rhode Island excepts employees whose remuneration exceeds $3,000 per annum. Vermont excepts employees and public officials whose remuneration or salary exceeds $2,000 per annum.

Maryland once had a limitation of $2,000 but apparently it is not in the present law.

This exception has been before the courts on several occasions and has been rather strictly construed. The laws which refer to an annual salary or annual remuneration apparently apply only to employees working under a definite contract for a year or more, at a determined or determinable wage amounting to more than the statutory limit.

Hauter v. Coeur d'Alene Mining Co., 228 Pac. 259 (Idaho)
Kelley's Dependents v. Hoosac Lumber Co., 113 Atl. 818 (Ver.)
E. H. Koester Bakery v. Ihrie, 127 Atl. 492 (Md.)
O'Bannon Corp. v. Walker, 129 Atl. 599 (R. I.)
Livingstone Worsted Co. v. Toop, 138 Atl. 183

Thus the question of what is actually received, or the rate of weekly remuneration are by no means conclusive on the question whether the employee comes within the exception or not. In

several of these cases the employee had weekly earnings which if continued for the year would have amounted to more than the amount limited in the statute; but no definite contract for a year. Thus applied, the exception has a limited scope. This is not true, of course, in Hawaii, where the limitation is on a weekly basis. The New Jersey exception is notable for the bizarre conclusion reached by the courts that it applies to cases of injury but not to death cases.

Jersey City v. Borst, 101 Atl. 1033
Plumstead v. Roxbury Tp., 151 Atl. 489

7. *Clerical Work.*

Exceptions appear in the laws of several states as follows:

Iowa excepts "persons engaged in clerical work only; but clerical work shall not include anyone who may be subject to the hazards of the business"

Oklahoma excepts (from certain hazardous occupations) "employees employed exclusively as clerical workers"

Wyoming excepts "Those engaged in clerical work and not subject to the hazards of the business"

To these may be added the exclusion in the New York law, from the 18th group of hazardous employments "Persons engaged in a clerical or trading capacity in or for a religious, charitable or educational institution."

The exceptions have been litigated to some extent, the question raised being as to whether the particular employee was subject to the hazard of the business. The reason for the exception is a feeling that the acts were designed to protect real workmen rather than the white collar class. For a discussion of this, see

Westbay v. Curtis & Sanger, 198 App. Div. 25 (N. Y.)

8. *Members of the Employer's Family Dwelling in His Home.*

This exception appears in Connecticut and Idaho.

In McNamara v. McNamara, 100 Atl. 31 (Conn.) it was held that the exception does not bar the claim of a son dwelling with his father against a firm of which his father is a member.

9. *Public Charities.*

Georgia excepts "employees of institutions maintained or operated as public charities".

Idaho excepts "employment by charitable organizations".

"Charities," "charitable organizations" and "public charities" are broad terms, covering establishments for religious and educational purposes as well as those dispensing medical assistance and poor relief. On grounds of public policy, such institutions have commonly a very restricted liability in tort. In a number of states, they are not liable at all for the wrongful acts of their servants or agents. In others, they are responsible only in cases where they have failed to exercise due care in the selection or the retention in service of the person committing the wrongful act. There are a very few states where their liability is that of a private employer.

11 Corpus Juris P. 274, 275, notes 95, 96, 97

This restricted or non-existent liability, in any state whose law is not compulsory, makes the question as to whether public charities are within the law of minor importance, because their failure to elect or their decision not to elect entails no very serious consequences. But the same public policy which operates to exclude liability in matters of tort would seem to operate in the direction of excluding liability to pay compensation. If the statute makes reference to a "business" or "enterprise" in describing "employment" or "employer", much more if it makes reference to a business carried on for gain or profit, there is additional reason for holding them excluded. Accordingly, there are several cases holding public charities not within the act.

Any public charity

Zoulalian v. N. E. Sanatorium & Benevolent Ass'n, 119 N. E. 686 (Mass.)

University

North v. Board of Trustees of University of Illinois, 201 Ill. App. 449 (Ill.)

Religious Corporation

Dillon v. Trustees of St. Patrick's Cathedral, 137 N. E. 311 (N. Y.)

Hospital

Rugg v. Norwich Hospital Association, 205 App. Div. 174 (N. Y.)

Curiously enough, Illinois, while holding a university not an "enterprise" within the meaning of the act, reaches the opposite result as to a hospital.

Hahnemann Hospital v. Ind. Board, 118 N. E. 767

The status of charitable institutions operated by the state or by

its public corporations involves considerations discussed under "Public Employments"

Agler v. Michigan Agricultural Hospital, 148 N. W. 341 (Mich.)
Peck's Case, 145 N. E. 532 (Mass.)

The status of certain charitable organizations in New York is involved in some doubt since the enactment of the amendment to section 3 of the act, adding to the list of "hazardous employments" a group including employees of four or more workmen or operatives. This group contains two exceptions:

(a) "Except persons engaged in a clerical, trading or non-manual capacity in or for a religious, charitable or educational institution"

(b) A minister, priest or rabbi, or a member of a religious order is not to be deemed an employee.

The natural inference from the exceptions is that otherwise religious, charitable or educational institutions come within the group, provided they employ four or more workmen or operatives.

10. *Miscellaneous.*

Logging Operations.—Maine excepts "employees engaged in the operations of cutting, hauling, rafting or driving logs or work incidental thereto, unless incidental to any business conducted by an assenting employee."

It will be recalled that New York excepts small logging and lumbering operations carried on by farmers.

Airmen.—Idaho excepts "airmen or individuals, including the person in command, and any pilot, mechanic or member of the crew engaged in the navigation of aircraft while under way".

"Blacksmiths, wheelwrights and other rural employments" excepted in Maryland.

"Any totally blind person" excepted in Illinois. The Wisconsin act provides that epileptics and blind persons may elect not to be subject to the act for injuries resulting because of such epilepsy or blindness and still remain subject to the act for all other injuries. The object of these provisions is doubtless to facilitate the employment of these unfortunates.

"Persons prohibited by law from being employed" excepted in West Virginia; but the exception seems superfluous.

"Persons engaged in voluntary service, not under contract of hire" excepted in New York (from the 18th group of "hazardous employments"). As indicated previously, volunteers are ordinarily ruled not within the act.

"Employment not carried on for pecuniary gain." This appears as an exception in the law of Idaho. The same result is effected in several other states by defining "employment" or "employer" as a business carried on, or one carrying on business, for pecuniary gain.

"Any member of a fire insurance patrol maintained by a board of underwriters" appears in the law of Illinois.

To the whole subject, this comment may be added. The practice of making exceptions is natural enough. The multiplication of exceptions, however, tends to defeat the general legislative intent that the act should be liberally construed. The courts must regard the legislative intent with regard to exceptions as entitled to the same consideration as with regard to the act in general; and in case of the exception of farm labor, and casual employments have at times tended to construe them broadly, and to indulge in what seems a refinement of logic to keep particular cases from coming within the act. The general rule of liberal construction would, as previously indicated, call for a construction which brings as many cases as possible within the act, in other words, a fairly strict construction of the exceptions.

F. *Application of the Act to Complex Employments.*

Not all contracts of service are simple transactions between one employee and one employer. That is the normal situation, and the situation which best accords with the language of the acts. But there are cases where a single contract of service may bring more than one person within the definition of employer, or raise a question as to which of two or more persons is the employer. Similarly the contract may embrace only a single employee or include in that category a firm, or a principal employee and his sub-employees. Once in awhile a case arises where it is uncertain as to which of the parties is employer and which employee. These cases, unless specifically provided for in the act, present problems to be determined by construction.

1. *Agency cases.*

Employment by and through an agent is one of the commonest of incidents. The compensation questions involved are determined in accordance with the principles of the law of agency.

(a) Where a servant acts within the scope of his authority, express or implied, he is not liable to pay compensation benefits as an employer.

Yolo Water & Power Co. v. Ind. Acc. Com., 168 Pac. 1146 (Cal.)
Fischer v. Ind. Com., 134 N. E. 114 (Ill.)
Franks v. Carpenter, 186 N. W. 647 (Iowa)
Sledge v. Hunt, 12 S. W. 2nd 529 (Tenn.)

This is apparently the case, irrespective of whether wages are paid by employer or by servant.

Roberts v. U. S. F. & G., 157 S. E. 537 (Ga.)

(b) If the servant acts within the apparent scope of his authority, the principal is liable; though if he has in matter of fact exceeded his authority, the principal has a right of action against him for damages.

(c) If the servant employs others without authority, actual or apparent, the principal is not liable to pay compensation.

Minarcsik v. Blank, 132 Atl. 251 (N. J.)

(d) If the servant fails to disclose his principal, but acts within his authority, the principal is bound by his contracts, and the employee upon becoming cognizant of the facts may at his election hold either the servant or the principal to the contract.

Scott v. O. A. Hankinson Co., 171 N. W. 489 (Mich.)
Frandsen v. Ind. Com. of Utah, 213 Pac. 197 (Utah)
Holloway v. Ind. Com., 271 Pac. 713 (Ariz.)

2. *Joint Employments.*

Where several persons enter into a single contract of service with a single employee, they are presumably joint employers; that is to say, jointly liable to pay compensation benefits. The most common case of joint employment in compensation cases is that of night watchmen employed to cover the premises of several employers.

In case of a true joint contract, the employers are jointly liable irrespective of the premises on which the accident occurs.

Sargent v. A. B. Knowlson Co., 195 N. W. 810 (Mich.)
Page Engineering Co. v. Ind. Com., 152 N. E. 483 (Ill.)
Frederick A. Stresenreuter Inc. v. Ind. Com., 152 N. E. 548 (Ill.)

Of course, if the contract is not single, but entered into by the employers individually, the obligation is not joint but several; that is to say, each employer is individually liable for injuries incurred in his services or on his premises, but not liable for injury incurred on the premises of others.

Western Metal Supply Co. v. Pillsbury, 156 Pac. 491

The case of a night watchman hired by a detective agency to guard the premises of a person does not involve a contract of service with the owner of the premises, the employer being the agency.

Similarly, one of two joint owners of a building may make a contract of service with a night watchman, which will bar him from remedy against either owner save under the compensation act.

Gibbons v. Gooding, 190 N. W. 256 (Minn.)

The same is true of a contract of service made with one member of the partnership as employer. If within the scope of the firm's business, the employee is employee of the partnership.

Klemmens v. North Dakota Work. Com. Bureau, 209 N. W. 972 (N. Dak.)

Joint obligations are common enough to receive statutory treatment in several states.

California disposed of the watchmen problem by excluding them from the act as employees.

Alabama, Delaware, Georgia and Missouri have statutes providing for contribution by the joint employers in proportion to their wage liability,—an obviously just rule.

Alabama deals with a situation where only a part of the employers are subject to the act, the effect of which is to make those subject to the act liable jointly for a portion of compensation benefits proportionate to the amount of the employee's total wage paid by them. This is an enlargement of the common law, for strictly speaking, a joint obligation cannot be enforced at all unless it can be enforced against all the joint obligors. Missouri goes one step further, declaring the liability joint and several, i.e., making each individually liable for the entire compensation, with right of contribution from the rest.

Maine has a provision somewhat different, dealing not with joint employments but with several employments: that is to say,

where an employee is employed concurrently by two or more employees, serving one at one time, another at another. This problem is discussed under the next heading.

Colorado has a provision concerning employees loaned to another by the employer, a problem hereafter discussed.

3. *Several Employments.*

It is not necessary that an employee work exclusively for one employer to be his employee.

Empire Glass & Decoration Co. v. Bussey, 126 S. E. 912 (Ga.)

The case of a person having separate contracts of service with two or more employers is not uncommon.

Thus in cases of watchmen.

Western Metal Supply Co. v. Pillsbury, 156 Pac. 491 (Cal.)
San Francisco-Oakland Terminal Rys. v. Ind. Acc. Com., 179 Pac. 386 (Cal.)

Case of insurance company employee, acting in spare time as local reporter for newspaper.

Kinsman v. Hartford Courant Co., 108 Atl. 562 (Conn.)

Case of employee in power station, spending part of his time operating transformers for railroad company, part of his time in operating power company's machinery.

Bamberger Electric R. R. Co. v. Ind. Com., 203 Pac. 345 (Utah)

Case of plumber employed to install gasoline pumps, though doing work for others while not so engaged.

Sinclair Refining Co. v. Ind. Com., 148 N. E. 291 (Ill.)

Case of minister making European trip to obtain material for lectures under auspices of church, and at same time receiving pay from a tourist organization for conducting a party.

Taylor v. St. Paul's Universalist Church, 145 Atl. 887 (Conn.)

The cases present no great difficulty as to liability. The employer for whom the common employee is working at the time of the accident is solely liable. The perplexing question is, what is the measure of his weekly wage—the wage received from the employer for whom he is working, or the wage received from all? There is a tendency to assess compensation benefits on the basis of his entire earning capacity, and this rule is embodied in the Maine statute previously mentioned.

4. *Employees hired out or loaned by their employer.*

In some occupations, particularly in contracting, the hiring out or loaning of an employee by one employer to another is an extremely common incident. There is the possibility here of two simultaneous contracts of service, one general and the other special, the latter superimposed on the first.

The general rule is stated in 39 Corpus Juris, p. 36, see 5, as follows: "The general servant of one person may become the servant of another by submitting himself to the direction and control of the other with respect to a particular transaction or piece of work, and even though the general employee has no interest in the special work; but such relation between the borrower and the servant is not established unless it appears that the servant has expressly or by implication consented to the transfer of his services to the new master. Where a master gives the labor of his servant to another, the master retaining supervision and control, the loaned servant is not the servant of the borrower, but is, while so engaged, the servant of the general master."

The Indiana Courts have expressed an opinion that the "fiction" of general and special employee has no place in the administration of the compensation act.

McDowell v. Duer, 133 N. E. 839 (Ind.)
Latshaw v. McCarter, 137 N. E. 565 (Ind.)

This, however, is an exception. Generally, the courts have followed very much the lines laid down above—lines pertaining to the general law of master and servant. Thus, it is generally held that where an employee is loaned or hired out he may, under some circumstances become, for the purposes of the compensation act the servant of the person to whom he is loaned or hired.

The vital factor in determining whether such a special contract of service exists is not the question as to whether the special employer pays him wages, though this may have some significance. The true test is, whether he passed into the control of the special employer, so as to owe him a duty of obedience with respect to the matter in hand. If the general employer retains control, he is employer.

Rongo v. R. Waddington & Sons, 94 Atl. 408 (N. J.)
Pruitt v. Ind. Acc. Com., 209 Pac. 31 (Cal.)
Fed. Mut. Liab. Ins. Co. v. Ind. Acc. Com., 210 Pac. 628 (Cal.)
Stacey Bros. Gas Const. Co. v. Ind. Acc. Com., 239 Pac. 1072 (Cal.)
Kirkpatrick v. Ind. Acc. Com., 161 Pac. 274 (Cal.)

Crawfordsville Shale Brick Co. v. Starbuck, 141 N. E. 7 (Ind.)
Scribner's Case, 120 N. E. 350 (Mass.)
Chisholm's Case, 131 N. E. 161 (Mass.)
Tarr v. Hecla Coal & Coke Co., 109 Atl. 224 (Pa.)
Famous Players-Lasky Co. v. Ind. Acc. Com., 228 Pac. 5 (Cal.)
Tilling v. Indemnity Ins. Co. of No. America, 283 S. W. 565 (Tex.)
Torsey's Case, 153 Atl. 807 (Me.)
De Nardo v. Seven Baker Bros., 156 Atl. 725 (Pa.)
Byrne v. Henry A. Hitner's Sons Co., 138 Atl. 826 (Pa.)
Sgattone v. Mulholland & Gotwals, 138 Atl. 855 (Pa.)
Ocean Acc. & Guar. Co. v. Ind. Acc. Com., 263 Pac. 823 (Cal.)
U. S. F. & G. Co. v. Stapleton, 141 S. E. 506 (Ga.)
Ideal Steam Laundry Co. v. Williams, 149 S. E. 479 (Va.)

The consent of the employee, expressed or implied, and his knowledge that he is passing temporarily into the service of another is generally held a vital element.

Murray v. Union Ry. of N. Y. City, 127 N. E. 907 (N. Y.)
Knudson v. Jackson, 183 N. W. 391 (Iowa)
Seaman Body Corp. v. Ind. Com., 235 N. W. 433 (Wis.)
Wilson & Co. v. Locke, 50 Fed. 2nd 81 (N. Y.)
Spodick v. Nash Motor Co., 232 N. W. 870 (Wis.)

There is one case to contra: Emack's case, 123 N. E. 86 (Mass.)

The amount of control necessary to establish the relation must be substantially complete.

Allen Garcia Co. v. Ind. Com., 166 N. E. 78 (Ill.)

Mere authority to indicate what is to be done, is not enough: and absence of evidence of right to control will indicate that employee remains in service of general employer.

Hogan's Case, 127 N. E. 892 (Mass.)
Golden & Boter Transfer Co. v. Brown & Sehler Co., 177 N. W. 202 (Mich.)
Schweitzer v. Thompson & Morris Co., 127 N. E. 904 (N. Y.)
Lewis v. S. M. Byers Motor Car Co., 156 Atl. 899 (Pa.)

and the special employment is strictly limited to what is done exclusively for special employer.

Centrello's case, 122 N. E. 560 (Mass.)

Generally the liability is single, i.e., the question is, whether the general or the special employer should pay compensation. There are cases, however, which indicate a double liability.

Independence Indemnity Co. v. Ind. Com., 262 Pac. 757 (Cal.)
De Noyer v. Cavanaugh, 116 N. E. 992 (N. Y.)
Schweitzer v. Thompson & Morris Co., 127 N. E. 904 (N. Y.)
Jaabeck v. Theodore A. Crane's Sons, 206 App. Div. 574 (N. Y.) (but see 144 N. E. 625)
Diamond Drill Contracting Co. v. Ind. Acc. Com., 250 Pac. 862 (Cal.)
Employers' Liab. Assur. Corp. v. Ind. Acc. Com., 177 Pac. 273 (Cal.)

The Colorado statute, mentioned above, provides that the general employer shall remain liable for compensation unless there is a new contract of employment with the employer to whom he is loaned. In the interest of the employee, a statutory rule even more rigid might be warranted. It is a distinct hardship on the latter to speculate as to which of two he must look for compensation.

Very similar to the above are the cases of golf caddies, who are in several cases held employees of the club but who are indubitably in the pay or under the direction of the player.

Claremont Country Club v. Ind. Acc. Com., 163 Pac. 209 (Cal.)
Indian Hill Club v. Ind. Com., 140 N. E. 871 (Ill.)

The point as to whether a caddie is also a special employee of the player has not figured as yet in the decided cases. Save in case of a professional, the caddie would undoubtedly come under the head of casual employees.

It may be noted that under some statutes which specify employments as businesses carried on for gain or profit, country clubs do not come within the law.

Maryland Casualty Co. v. Stevenson, 288 Pac. 954 (Okla.)
Francisco v. Oakland Golf Club, 193 App. Div. 573 (N. Y.)

Cases involving nurses have raised some very similar questions:

Brown v. St. Vincent's Hospital, 222 App. Div. 402 (N. Y.)
Renouf v. N. Y. C. R. R. Co., 229 App. Div. 58, 173 N. E. 218 (N. Y.)
Visiting Nurses Ass'n v. Ind. Com., 217 N. W. 646 (Wis.)

5. *Alternating Employments.*

Cases where one person may be both employer and employee are found in those states where compensation is awarded working members of partnerships, though this is legally an anomaly. A more legitimate case is that of an association of farmers who agreed to help each other fill their silos. This was held not a partnership but a genuine contract of service for pay on the part of each member with every other member. The one for whom the work was being done was, of course, the employer; and when the work shifted to another farm he became an employee.

Smith v. Jones, 129 Atl. 50 (Conn.)

6. *Classes of Employment.*

The effect of the compensation acts is to divide employments into classes differing as to rights and duties. Four such classes may be distinguished.

(a) Employments as to which the act is compulsory, i.e., where the compensation plan applies conclusively to both employer and employee.

(b) Employments as to which the act is semi-compulsory, i.e., where the plan is normally elective as to employer, to employee or to both, but where failure to come under the plan entails removal of common law defenses or other disability.

(c) Employments as to which the act is elective: that is to say, where employer and employee are free, without prejudice to their rights, to elect or to reject the plan.

(d) Employments to which the act cannot apply even by election.

A given employer may be in one class as to a part of his employees and in another class as to another part. Similarly, an employee may as to part of his activities come within one class, as to another part in a different class. This is in part unavoidable, but in part a consequence of the development of the compensation acts. These were originally subject to considerable doubt as to constitutionality, and therefore drawn in a manner often strikingly constrained and artificial. They had to overcome a degree of prejudice on the part of both employers and lawyers, and therefore at times contain more restrictions and exceptions than are at all desirable. Now that the air has cleared, there have appeared acts drawn on simple and inclusive lines, well adapted to eliminate some at least of the manifold causes of litigation, and therefore afford a remedy simpler and surer.

The most conspicuous example is afforded by those provisions of a number of acts which apply the compulsory or semi-compulsory portion of the law, not by means of a broad and simple definition, but by means of a list of employments denominated as "hazardous" or "extra hazardous". Certain expressions of the United States Supreme Court in the earlier compensation cases

gave basis to a belief that the constitutionality of a compulsory act depended upon the hazardous character of the employment. This the case of Ward and Gow v. Krinsky, 259 U. S. 503, practically dispelled; but the belief, coupled with a desire to restrict the application of the act, caused a number of acts to be cast in this form.

Thus the compulsory features of the acts of Illinois, Kansas, Maryland, New York, Oklahoma, Washington and Wyoming, and the semi-compulsory features of the laws of Montana, New Hampshire, New Mexico and Oregon are founded upon lists of "hazardous" or "extra hazardous" employments. The list of extra hazardous employments in the Arizona law seems to serve no useful purpose.

These provisions have led to a deal of litigation, particularly in New York and Illinois. The classifications were not always clearly defined, some embracing not only businesses but incidental activities of many businesses not otherwise classed as hazardous. The Illinois classification of businesses subject to regulation by law or ordinance might, if interpreted literally, cover all occupations whatsoever. There was uncertainty as to the effect of the law upon a business of which only part of the operations were hazardous, or upon an employee engaged in non-hazardous work for an employer classed as hazardous, or engaged in hazardous work for an employer classed as non-hazardous. To review the decisions is not desirable, partly because it requires a study of each state individually, partly because the states wherein litigation raged the hottest have taken effective means to broaden or define their laws.

New York, for instance, by introducing a provision classing as hazardous all employments wherein four or more workmen or operatives were employed, rendered the other classifications of importance chiefly in cases of relatively minor industries; and by a second provision, permitting an employer, by furnishing the security required by law to come under the compulsory provisions, broadened the class still further. Other states have added provisions, as in Maryland and Montana, for inclusion of employments hazardous in fact but not specifically enumerated, and as in Louisiana and Washington for the determination as hazardous of classifications not enumerated by finding of court or commission.

It suffices therefore to note merely these points:

(a) Where the legislature condescends to be specific, the courts have no option but to say *Ita lex scripta est* and take the law as it is written. It is not too much to say that the general tendency in interpreting these provisions has, with some exceptions, inclined towards strictness.

(b) The provisions designed to broaden the laws by providing for the inclusions of classifications not enumerated has been limited by the application of the rule of *ejusdem generis*. The substance of this rule is, that where a statutory provision sets forth a detailed list of items and adds a general clause, the general clause is taken to include only items of the same or similar nature to those specifically mentioned.

Page v. N. Y. Realty Co., 196 Pac. 871 (Mont.)
State v. Eyres Storage & Distributing Co., 198 Pac. 390 (Wash.)

This further point may be noted as to excepted employers, employees and employments. The extent to which these can be included in the law by voluntary election depends upon the statute: that is, except in cases excluded because beyond the jurisdiction of the state. There are only scattered cases where the law specifically says an excepted employment cannot be included, as in the case of farm labor in Alabama. Some laws provide specifically for inclusions by election, but others while providing that some excepted employments may be thus included are silent as to others. There is a well established rule that the specific inclusion of certain named items indicates an intent to exclude all others.

The mischief of the situation is that, while the parties in such case may go through the form of election and thereby effectively estop themselves from denying that they are within the law, this does not broaden the jurisdiction of the industrial commission, nor does it necessarily act as a bar to the rights of others, not parties to the election: as for instance, a husband bringing suit for loss of services of a wife, a parent for loss of services of a minor child, or those authorized by law to bring action in case of death by wrongful act.

IV. Conclusion

The purpose of traversing this large and varied field is to obtain some idea of the general methods of the courts in construing the compensation acts. Practically it was possible to cover only a limited portion of the act, but the portion selected is the one which not only lies at the very foundation of the liability to pay compensation but contains the greatest number of purely legal questions bearing upon the effect produced by the compensation acts upon the general law of Master and Servant. It is a very easy thing to base almost any conclusion upon a particular case or upon a limited group of cases. There are undoubtedly many cases where there is much to criticize in the result. The foregoing study, covering a broad field, seems to warrant the following conclusions:

(a) The courts in dealing with the definitions of "employer", "employee" and "employment" have started on the basis of the contract of service as it had previously been defined in the laws, and barring such modifications and limitations as were necessitated by the statutory definitions, have in the main clung to established legal principles. To this there are two exceptions:

1. The decisions to the effect that a partner receiving the equivalent of a wage as distinct from profits may be considered for the purposes of the act as an employee of the firm. But these decisions are confined to a very few states, the prevailing opinion being the other way.

2. The decisions as to illegal contracts, more particularly, that minors illegally employed may be considered employees for the purpose of the compensation acts. But here again, the courts which have awarded compensation in such cases apart from statutory requirement are relatively few in number. It is not thought that those courts would award compensation to an employee who was himself in the course of his employment in flagrant violation of law: as, for example, an employee of a gambling house or a house of prostitution.

The concept that an officer of a corporation may also be, under some circumstances, an employee of the corporation is a novel development, but by no means without clothes of reason.

(b) In dealing with questions involving the jurisdiction of

the state, such as employments coming under the control of the United States by virtue of the commerce clause, employments touching upon the maritime jurisdiction of the United States and employments passing beyond the territorial boundaries of the state, the decisions displayed an early tendency to stretch the state jurisdiction somewhat further than sound reason would warrant, but ultimately settled down along very orthodox lines. In the case of decisions relative to the maritime jurisdiction of the United States, the decisions of the Supreme Court made some departure from orthodoxy, but in the direction of curbing rather than extending the operation of the compensation laws.

(c) In dealing with questions touching the extent to which the state and its political subdivisions and agencies have been brought within the scope of the compensation acts, the law has been on the whole strictly interpreted.

(d) In dealing with the application of principles familiar to the law of employers' liability, such as the relation of independent contractor and general and special employee, the courts have occasionally indicated an opinion that it was questionable if these concepts had proper place in the scheme of workmen's compensation. But the tendency which has prevailed is to apply them insofar as the statutes will permit.

Hence the theory outlined at the beginning of this paper, namely, that the liberality of the courts is a very different and far more a constrained matter than the liberality of the legislatures or administrative officials, seems justified. The courts have desired to interpret the compensation acts liberally but this has not involved a radical revision of established principles. To the extent that these principles were unmistakably changed by statute, the court had no option but to recognize the law as written. But when the court could, they have based their decisions upon familiar and well established rules of construction and have embodied in the law as much as was possible of the existing law relating to contracts of service. Far from being an increasing liberality, the tendency has been if anything the other way.

It was in the early stages of the compensation laws that decisions showed a tendency to strike out along novel lines. The longer the courts have dealt with compensation problems, the

greater the tendency to adhere as closely as possible to established principles. There is one well established case of increasing liberality, though not strictly speaking a liberality in construction of the compensation law, namely, an increasing liberality on the part of the United States Supreme Court on questions of constitutionality. The reasoning and the *obiter dicta* in the earlier compensation cases are flatly incongruous on many points with the later decisions.

Barring this, there seems on the whole little reason to charge the courts with an increasing liberality. It seems probable likewise that the enthusiasm of legislatures in broadening the compensation acts has in the more progressive states gone to its practicable extent, and the present tendency is to make much of rather trifling amendments. The practice of industrial accident boards, in some cases fairly chargeable with criticism for having stretched the compensation acts a deal further than logic and sound principle warranted, seems to have settled into a soberer and more reasonable course.

The compensation acts, novel in principle, extensive in scope and not always as clearly and scientifically expressed as they might have been, gave rise to a host of questions which thronged in upon those charged with construing and applying the law a deal faster than was conducive to sane and orderly decision. That both commissions and courts have under these circumstances made some wild decisions was no more than might have been expected. That the courts have on the whole exerted their powers in the direction of order, consistency and logic and with an appreciation that, while the acts were designed for the benefit of the employee, the rights of the employer must also be considered, is I think, borne out by the general trend of decisions.

On this point it is pertinent to quote from a late case (Pacific S. S. Co. v. Pillsbury, 52 Fed. 2nd 686) a phrase well worth preserving as expressing an eminently sane view with regard to the general interpretation of the compensation acts.

> "The act in question is wise in its conception and beneficent in its operation. It must be interpreted and enforced with such care that it shall not be an agency of unfairness either to the employer or to the employee. Its careful and fair administration is the best guaranty of its permanence."

THE CHEMICAL AND DYESTUFF RATING PLAN

BY

HARRY F. RICHARDSON

The customary procedure for the segregation of risks into rate groups for casualty insurance purposes, particularly in workmen's compensation, is to erect classifications which are broadly descriptive of (1) a product, (2) a process, *or* (3) a business. Few, if any, classifications involve more than one of these three principles. For example, we have in our compensation manual, "Boot and Shoe Mfg." This is a typical "product" classification and any manufacturer of shoes is included in this classification irrespective of whether he makes his shoes by hand or whether his factory is equipped with the most up-to-date machinery. Other classifications such as "Electroplating" are based upon a particular "process." In such a classification we would include a risk using this process irrespective of whether the metal used in the plating process was copper, or silver, or nickel—or whether the objects plated were small pieces of metal or were heavy machinery parts.

At only one point in the compensation classification system is there any definite attempt to combine more than one of the classification principles enumerated above, in the determination of the manual rates. The Chemical and Dyestuff Rating Plan is the exception. In this plan we take into consideration *both* the raw materials or products on the one hand, and the processes involved, on the other. Because the plan is somewhat unique, a brief description both of its makeup and the manner of its application may be of interest.

Certain chemical products and processes have always been, and still are covered by separate classifications of the usual type —that is, they are purely product classifications such as, "Acid Mfg." or they are process classes such as "Distilling." These classifications cover broad and fairly well established industries in which the individual risks, in the opinion of the underwriters, are sufficiently homogeneous to warrant the use of classifications which follow the customary classification principles. On the other hand, it has been recognized that there are numerous risks which manufacture chemicals or dyestuffs or where the primary

hazard is of a chemical nature, which have materially different characteristics and potential hazards. The number of risks of a similar nature is so small, however, that it is impracticable to set up separate classifications because the exposure for any homogeneous group of risks would be too small to obtain any practical statistical or rate making value. Prior to the establishment of the Chemical and Dyestuff Rating Plan, these risks were included in a single classification with an "A" rate. This procedure meant that the particular rate making organization having jurisdiction over the risk would establish a basic rate for that risk based upon its judgment of the particular hazards involved. However, because there were no uniformly recognized principles for the establishment of such "A" rates for chemical risks, there was little consistency in the method of rating them.

During the general revision of rates and of manual classifications which was undertaken by the then newly established National Council on Workmen's Compensation Insurance in 1920, the General Rating Committee recognized the desirability of establishing some fixed procedure in the establishment of rates for such risks that might be uniformly applied in all states. To this end a sub-committee was appointed to develop such a plan. The underwriters which formed this committee solicited the aid of technical experts connected with the rating bureaus and the insurance companies. After careful study of the problem, and an elaborate investigation into the many hazard producing elements presented by chemical risks, the sub-committee presented a plan which was officially put into effect on April 1, 1921. Although there have been, from time to time, some minor changes in the technical details as respects the chemical ingredients recognized or the specific processes considered in the application of the plan, no fundamental change has been made since its original adoption. Therefore, in our particular discussion of the Chemical and Dyestuff Rating Plan it seems desirable that we describe it as it stands today.

Scope of Plan

Although the Chemical and Dyestuff Rating Plan was established primarily for the purpose of classifying and rating risks engaged in the manufacture of chemicals and dyestuffs, it is also

applied to those risks which present hazards which are primarily of a chemical nature, although the chemicals and dyestuffs are not actually manufactured by the risk. There are many risks which engage in the simple mixing, canning or bottling of materials which, to quote from the plan, are "flammable, poisonous, caustic or corrosive." Because the governing hazards of such risks are primarily chemical, the Chemical and Dyestuff Rating Plan contemplates the inclusion of such risks, as well as those which actually manufacture the chemicals themselves.

As already noted, there are a number of specific classifications in the compensation manual which cover the manufacture of certain chemicals. The Chemical and Dyestuff Rating Plan does not apply where the operations are specifically classified in the manual, but is only used where there is no appropriate individual classification. Since the introduction of the Chemical and Dyestuff Rating Plan, there has been a tendency to reduce the number of such specific classifications and to incorporate any risks formerly classified thereunder in the Chemical Plan.

Fundamental Principles

As suggested above, risks which are included in the Chemical Plan are grouped both with respect to (1) the degree of hazard involved in the raw materials or the final products, and (2) by the hazard created by or during the processes of transforming the raw materials into the final product. The hazard created by the substances used or manufactured is measured in terms of "flammability" or their explosive hazard.

In application, the plan consists of a diagram of 24 squares, each of which represents a classification of risks with certain distinguishing characteristics as to raw materials, products and processes.

Appendix I shows a typical "diagram" or "rate sheet" for a given state. In the diagram the vertical columns (abscissae) represent the degree of hazard of the raw materials and products from the standpoint of flammability, and the horizontal lines of the diagram (ordinates) represent the degree of hazard of the processes involved.

The flammability or explosion hazard of a material is measured in terms of "flash-point" which is defined as "the specific

temperature lower than the boiling point at which a volatile substance gives off vapor in sufficient quantity to ignite momentarily with a slight explosion on the approach of a flame." "Flash-points" have been grouped into four classifications in diminishing order of hazard as follows:

(a) Flash-point—0° F. or below.
(b) Flash-point—0° F. to 80° F.
(c) Flash-point—80° F. to 125° F.
(d) Flash-point—over 125° F.

The plan contains an alphabetical list of the usual raw materials and products found in the rating of chemical risks, which list is known as "Table A." Following the name of each substance is a letter indicating the particular group into which the material falls as respects its "flash-point." This Table is currently reviewed by the technical representatives of the carriers on the basis of current chemical information. Appendix II represents a typical page of Table A, which, in all, lists some 350 different chemical substances.

As previously stated, the horizontal lines or "ordinates" in the diagram represent various chemical processes grouped in the order of their hazards. As a part of the plan, there is another table—"Table B," which specifically describes the various processes that are commonly encountered in this type of risk. Briefly these ordinates embrace the following:

1. Process highly flammable or explosive.
2. Process flammable or explosive or involving the generation or use of intensely poisonous gases or substances.
3. Process slightly flammable or explosive or involving the generation or use of highly poisonous substances.
4. Process involving the generation or use of strongly caustic, corrosive or poisonous substances.
5. Process involving the generation or use of slightly caustic, corrosive or poisonous substances.
6. Process non-hazardous.

Appendix III gives a typical page of Table B and will indicate the manner in which the various processes are described. Appendix IV includes a list of all of the several processes that are included in each group. It will be noted that among the processes

indicated as hazardous, are those which involve the generation or use of certain poisonous, caustic or corrosive gases or substances. These gases or substances are listed in the appropriate ordinate of Table B, but in addition they are listed in Table A with an appropriate number indicating their particular degree of "process hazard" or, in other words, the ordinates which should be used in applying the plan, if that particular gas or substance is encountered.

Method of Application

When a risk within the scope of the plan comes to the attention of the rating organization having jurisdiction, a special inspection is made to determine its various characteristics from a chemical standpoint. A special report form is used for this purpose which is designed to bring out all of the various chemicals which are used in the manufacture of the finished product, and detailed descriptions are required of each of the several processes that are involved. In many states, particularly where the chemical industry is important, the rating bureau assigns a special inspector for investigations of this kind—this inspector having a special knowledge of chemical processes.

After the inspection has been made the rating bureau reviews the data and assigns a classification and rate applicable to that risk. In general, the Chemical Plan contemplates the establishment of a single classification and rate to cover all of the chemical manufacturing operations of the assured, this classification and rate to be that resulting from the application of the plan through consideration of the most hazardous raw material or product and the most hazardous process involved.

From the inspection report form, the rater lists the raw materials and products, and then through reference to Table A of the chemical plan determines the proper column of the diagram (abscissa) corresponding to the *most flammable* raw material or product involved. Correspondingly, Table B is reviewed to determine the *most hazardous* process involved, which gives the proper horizontal line or ordinate of the diagram.

The classification and rate for the risk in question will then be located in the diagram at the intersection of the column (abscissa) and the horizontal line or ordinate. In Appendix V

are given two typical examples of the simple application of the Chemical and Dyestuff Rating Plan.

Average Rating

As previously stated, the Chemical Plan normally contemplates that a single classification and rate shall be determined to cover all of the chemical manufacturing operations of the assured based upon the most hazardous raw material or product on the one hand, and the most hazardous process involved on the other. There are, however, certain exceptions to this general rule. If the risk involves a number of distinct chemical processes which involve varying degrees of hazards, recognition of these distinct processes is made if the following conditions are complied with:

(a) There is no interchange of labor among the several distinct processes.
(b) The separate operations are conducted in separate buildings or contiguous structures having a party wall which is substantial and continuous from cellar to roof.
(c) In the case of particularly hazardous operations of a flammable or explosive nature (as contemplated by abscissae A and B or ordinates 1 and 2), such separations of departments must be made by fire walls, the only openings in which are provided with standard fire doors.

Where a risk qualifies for such "average rating" treatment, a rate is first established for each "distinct process" in accordance with its governing hazards as respects raw materials or products and processes. A composite rate is then determined by combining the several individual rates into a weighted average;—the combination to be made upon the basis of the number of employees to which each individual rate is applicable.

This principle of average rating also is used for the purpose of including in the final rate for a risk, a department in which the predominating hazard is not primarily chemical in nature, but in which operations are conducted which are incidental to the chemical process. In such cases the non-chemical department enters into the average rating at the manual rate for the classification in the manual which best describes the operations performed in that department.

In cases where average rates are determined, the plan does not provide directly a statistical code number. To provide for such cases a separate group of code numbers has been set apart —these numbers running from 4860 to 4883. The classifier in coding an average rated risk must determine the code number on the rate sheet which provides a rate nearest the rate developed by average rating and then assign to the specific risk a code number 60 numbers higher than the number on the rate sheet.

Appendix VI gives an example of how an average rate is determined through the application of the Chemical and Dyestuff Rating Plan.

Rates

The original rates that were used in connection with the Chemical and Dyestuff Rating Plan were based almost entirely upon the judgment of the chemical engineers who were responsible for the technical details of the plan. Of course, in establishing these rates, analogies were made to the existing classification experience on a number of chemical industries, but, in general, the relationship between the various rates in the plan were based upon the engineers' judgment as to the relative hazards of the flammability of various materials and the hazards of different chemical processes. When the plan was developed it was assumed that the decrease in hazard for each of the groupings of "flammability" corresponded to the decrease in hazard for each of the different classifications of "process." Accordingly, the rates for the squares on the diagonals of the diagram were uniform. Thus, the same rate applied to code 4801 (B-1) as for code 4804 (A-2), and so on throughout the diagram. (See Appendix I.)

Because of the delay in the collection of accident statistics under Schedule Z, little data was available until the fall of 1926 when the experience for policy years 1921, 1922 and 1923 was combined. Even then the data was extremely limited except for a few classifications. Almost 50 per cent. of the total payroll exposure under the plan as a whole was concentrated in code 4815, and so the revision of rates at that time constituted little more than the development of a rate for code 4815 (D-4), and adjusting the other rates to maintain the previous hazard differential.

There has just become available to the National Council on Compensation Insurance the experience under the Chemical Plan

for policy years 1925 to 1929, inclusive. This experience covers some $140,000,000 of payroll. Approximately 50 per cent. of this payroll exposure has been developed in those statistical code numbers which involve "average rating," and inasmuch as the experience in such statistical code numbers does not represent the hazards of any separate or particular chemical process, it is doubtless improper to use such experience in the determination of the relative hazards of the various groups of flammability and the classification of processes that are used in the plan. It is unfortunate that of the remaining experience, 85 per cent. of the payroll is concentrated in five of the twenty-four classifications, and that about 45 per cent. of all of the payroll available for the determination of the relative hazards of the several classifications is concentrated in one square—code 4815 (D-4).

In spite of this concentration of experience in a few classifications, it seems reasonably possible to develop certain conclusions as to the relative hazards of the several items that go to make up the Chemical Plan. For the purpose of study, the experience of the four classifications in each process group were combined, and the results compared to determine whether or not there appears to be a difference in the hazards of the several process groupings as is assumed in the plan.

Chart No. 1 shows the results of these combinations. In this diagram, total pure premiums in terms of percentages have been plotted for the four classifications under each process. Because of the large volume of data in process group 4 it was decided to consider that group as the basis or 100 per cent. on the Diagram. Unfortunately, the volume of experience in process groups Nos. 1 and 2 was too small to be of any dependable value, and the same was true of the "serious" (death, permanent total and major permanent partial) experience in groups 5 and 6. Based upon the data now available, it seems that we can be reasonably justified in the conclusion that the hazards of processes in group 6 are approximately 50 per cent. of the hazards of those in group 4; that the hazards of group 5 processes are approximately 75 per cent. of those in group 4; and that processes in group 3 represent hazards approximately 150 per cent. of those in group 4. The data with respect to processes in groups 1 and 2 are by no means conclusive, and, for that reason, I would hesitate to conjecture even the approximate hazards of these two groups.

Unfortunately, the determination of the hazards of the several groups of flammability is not as simple a problem because of the fact that practically all of the exposure is concentrated in those classifications that come in abscissa D. However, Chart 2 has been prepared showing the total pure premiums (in terms of percentage) for the combined experience for the six classifications in each of the several flammability groups using group D as the starting point for making comparisons. Although there is some upward trend from group D, the results are not entirely convincing. Based upon five years of countrywide exposure, the maximum differential in these flammability groups is slightly less than 25 per cent., whereas, in the original plan it was assumed that the differential was in the order of 200 per cent. Admitting that the volume of data for flammability groups A, B and C is somewhat limited, it seems probable that the original judgment of the chemical engineers who developed the plan, somewhat exaggerated the flammability or explosive hazard of the various chemicals that enter into the assignment of rates under the plan. It is quite probable that the hazards of flammability are of a catastrophic nature, which would not evidence themselves in the experience until an extremely broad volume of exposure had been developed, but on the basis of the available data, it would appear that the premise of using uniform rates for the diagonal squares in the diagram cannot be justified because the hazard differentials for the processes appear to vary more markedly than do the hazard differentials for the flammability groups. Chart No. 3 has been prepared showing the original rate differentials (in terms of percentage) for the several squares in the diagram using code 4815 as the starting point. At the righthand side of this same chart is a suggested hazard grouping, again using code 4815 as the basis. In this diagram the relative hazards for the several processes have been based upon the adjusted total pure premiums as indicated in Chart No. 1. For the relative hazards of the flammability groups, it has been assumed that the flammability hazard of group C is 5 per cent. greater than for the corresponding hazards for the classification in group D; that the hazards of group B are 10 per cent. greater than group C; and that the hazards in group A are 15 per cent. greater than group B. Whether or not the relative hazards as indicated by this suggested diagram are approximately correct can definitely be

proven only when a still greater volume of data is available, particularly in those classifications in the higher hazard groups of both process and flammability, but from our present data it would appear that the original conception of the flammability hazards was somewhat exaggerated.

Conclusion

After approximately ten years of use, I think it can be stated quite safely that the Chemical and Dyestuff Rating Plan has served a very useful purpose in determining the classifications and rates for such a heterogeneous group of risks as are encountered in the chemical industry. To establish individual classifications which would properly treat the multiplicity of hazards that are present in the chemical field would be a practical impossibility both from the standpoint of the development of appropriate classification phraseology and because each such classification would probably never develop enough statistical data upon which to base reasonable rates. The use of the "two way" plan has, undoubtedly, been better than any single basis for the determination of hazards, although, as previously stated, it does appear from the current experience that the hazards of flammability have been somewhat exaggerated.

It is true that the results of experience rating risks which are subject to the Chemical Plan have shown wide fluctuations from the basic rates—probably as great as for any other group of risks. But it is doubtful if we could expect any different result. The chance of the "final adjusted rate" as developed by an experience rating plan, coinciding with the actual basic rates is small even in a group of risks that is exactly described by the classifications in which they are grouped. In addition to the low expectancy of accidents which make a chance occurrence of considerable importance, there are many other variables that cannot be recognized in any classification phraseology regardless of how careful that description has been drawn. Refinements in processes, the character and conditions of the physical equipment, the general characteristics of the employees (particularly with respect to the knowledge of their work and their attitude toward safe practices), and the wage rates which are paid in comparison to the average in the industry are only a few of the

factors that enter into this problem. Therefore, I think that it would be too much to expect that the results of experience rating risks which enter into the Chemical Plan should closely agree with the basic rates.

Whether or not the general principle of using two basic principles of classification—that of the hazards of the raw materials and products on the one hand, and the hazards of the processes involved, on the other—can be incorporated in the classification of other types of risks is open to question, but insofar as chemical risks are concerned, this plan seems to be serving a very useful purpose.

CHEMICAL AND DYESTUFF RATING PLAN. ORIGINAL PRINTING

NOTE:—Code Numbers in parenthesis are to be used in connection with risks classified under the principle of average rating. See rule 5 on page 3 of the Chemical and Dyestuff Rating Plan.

Effective 12.01 A. M., September 1, 1931.

ORDINATES	ABSCISSAE—FLAMMABILITY			
PROCESSES	A Substances flashing at 0° Fahrenheit or less	B Substances flashing at 0° to 80° Fahrenheit	C Substances flashing at 80°—125° Fahrenheit	D Substances flashing at more than 125° Fahren.
1 Process highly flammable or explosive.	**4800-(4860)** Rate 12.68 Min. Prem. 213. Excess .379 Ex-Med. .13 L. & E. Constant 23.	**4801-(4861)** Rate 10.57 Min. Prem. 182. Excess .379 Ex-Med. .13 L. & E. Constant 23.	**4802-(4862)** Rate 9.48 Min. Prem. 165. Excess .380 Ex-Med. .13 L. & E. Constant 23.	**4803-(4863)** Rate 8.46 Min. Prem. 150. Excess .380 Ex-Med. .13 L. & E. Constant 23.
2 Process flammable or explosive or involving the generation or use of intensely poisonous gases or substances.	**4804-(4864)** Rate 10.57 Min. Prem. 182. Excess .379 Ex-Med. .13 L. & E. Constant 23.	**4805-(4865)** Rate 9.48 Min. Prem. 165. Excess .380 Ex-Med. .13 L. & E. Constant 23.	**4806-(4866)** Rate 8.46 Min. Prem. 150. Excess .380 Ex-Med. .13 L. & E. Constant 23.	**4807-(4867)** Rate 6.20 Min. Prem. 116. Excess .378 Ex-Med. .13 L. & E. Constant 23.
3 Process slightly flammable or explosive, or involving the generation or use of highly poisonous substances.	**4808-(4868)** Rate 9.48 Min. Prem. 165. Excess .380 Ex-Med. .13 L. & E. Constant 23.	**4809-(4869)** Rate 8.46 Min. Prem. 150. Excess .380 Ex-Med. .13 L. & E. Constant 23.	**4810-(4870)** Rate 6.20 Min. Prem. 116. Excess .378 Ex-Med. .13 L. & E. Constant 23.	**4811-(4871)** Rate 4.74 Min. Prem. 94. Excess .374 Ex-Med. .17 L. & E. Constant 23.
4 Process involving the generation or use of strongly caustic, corrosive or poisonous substances.	**4812-(4872)** Rate 8.46 Min. Prem. 150. Excess .380 Ex-Med. .13 L. & E. Constant 23.	**4813-(4873)** Rate 6.20 Min. Prem. 116. Excess .378 Ex-Med. .13 L. & E. Constant 23.	**4814-(4874)** Rate 4.74 Min. Prem. 94. Excess .374 Ex-Med. .17 L. & E. Constant 23.	**4815-(4875)** Rate 4.39 Min. Prem. 89. Excess .404 Ex-Med. .16 L. & E. Constant 23.
5 Process involving the generation or use of slightly caustic, corrosive or poisonous substances.	**4816-(4876)** Rate 6.20 Min. Prem. 116. Excess .378 Ex-Med. .13 L. & E. Constant 23.	**4817-(4877)** Rate 4.74 Min. Prem. 94. Excess .374 Ex-Med. .17 L. & E. Constant 23.	**4818-(4878)** Rate 4.39 Min. Prem. 89. Excess .404 Ex-Med. .16 L. & E. Constant 23.	**4819-(4879)** Rate 3.63 Min. Prem. 77. Excess .344 Ex-Med. .13 L. & E. Constant 23.
6 Process non-hazardous.	**4820-(4880)** Rate 4.74 Min. Prem. 94. Excess .374 Ex-Med. .17 L. & E. Constant 23.	**4821-(4881)** Rate 4.39 Min. Prem. 89. Excess .404 Ex-Med. .16 L. & E. Constant 23.	**4822-(4882)** Rate 3.63 Min. Prem. 77. Excess .344 Ex-Med. .13 L. & E. Constant 23.	**4823-(4883)** Rate 2.41 Min. Prem. 59. Excess .372 Ex-Med. .18 L. & E. Constant 23.

APPENDIX II

2nd Reprint
Page No. 11
Effective 12:01 A. M.,
June 30, 1932.

TABLE A.★

Classification of Chemicals According to Relative Fire and Explosive Hazard.

(To be used in determining column (Abscissa) of Rating Diagram for each raw material and finished product.)

Group (A) includes all chemicals, liquid or solid, having flash-points of less than zero degrees F.

Group (B) includes all chemicals, liquid or solid, having flash-points between zero and 80 degrees F.

Group (C) includes all chemicals, liquid or solid, having flash-points between 80 and 125 degrees F.

Group (D) includes all chemicals, liquid or solid, having flash-points over 125 degrees F.

A

*Acetate, Amyl (B) (4)
Acetate, Butyl (B)
Acetate, Ethyl (B)
Acetate, Methyl (B)
*Acetic Acid (glacial) (C) (4)
*Acetic Acid (D) (5)
Acetone (B)
Acetyl Chloride (B)
Acetylene (A)
*Acrolein (D) (4)
*Alcohol, Amyl (C) (4)
Alcohol, Benzyl (D)
Alcohol, Butyl (Butanol) (B)
*Alcohol (denatured) (B) (4)
Alcohol, Ethyl (Ethanol) (B)
Alcohol, Isobutyl (B)
*Alcohol, Methyl (Methanol) (B) (4)
Alcohol, Propyl (B)
Alcohol, Vinyl (B)
*Alcohol, Wood (B) (4)
*Aldehydes (D) (4)
Alpha Naphthylamine (D)
Aluminum Dust (B)
Aminoazobenzene (D)
*Ammonia (D) (4)
*Ammonia, Anhydrous (D) (4)
*Ammonium Hydroxide (D) (5)
Ammonium Nitrate (D)
Ammonium Nitrite (D)
Ammonium Perchlorate (D)
Ammonium Permanganate (D)
Ammonium Picrate—10 per cent. water or more (B)
Ammonium Picrate—less than 10 per cent. water (A)
*Amyl Acetate (B) (4)
*Amyl Alcohol (C) (4)
*Aniline Oil (D) (3)
Aniline Salts (D) (3)
Anthracene Oil (D)
Anthraquinone (D)
*Antimony Sulphide (D) (4)
*Antimony Trichloride (D) (4)
*Antimony Trioxide (D) (4)
Argon (D)
*Arsenic (white) (D) (3)
*Arsenic Acid (D) (3)
*Arsenic Trioxide (D) (3)
*Arseniuretted Hydrogen (D) (2)
*Arsenous Chloride (D) (3)
*Arsine (D) (2)

B

Barium Chlorate (D)
*Barium Nitrate (D) (3)
Barium Peroxide (D)
Benzaldehyde (D)
Benzidine (D)
Benzidine Sulphate (D)
Benzidine Sulphite (D)
*Benzine, (high test gasoline) (A)
*Benzol (benzene) (B) (3)
Benzyl Alcohol (D)
*Benzyl Chloride (D) (4)

Substances marked with an (*) are also to be considered in connection with processes. See Table "B." The figures in parentheses indicate the Ordinate of Table "B" in which the substance is to be found.

APPENDIX III

1st Reprint
Page No. 16
Effective 12:01 A. M.,
June 30, 1932.

TABLE B. ★

Classification of Chemical Processes According to Relative Hazard.

(To be used in determining line (Ordinate) of diagram for each chemical process.)

Ordinate 1. *Nitration.* The process by means of which the radical (NO_2) is introduced into a compound so that it combines directly by means of its nitrogen with carbon. It is usually done in one of the following ways:

(a) The substance is treated with a mixture of strong nitric and sulphuric acid, usually in an iron vessel called a nitrator.

(b) The substance is added to sodium nitrate and strong sulphuric acid added, in a nitrator.

(c) In some cases strong nitric acid alone is added to the substance to be nitrated.

(d) In a few cases nitrous gases or sodium nitrate in acid solutions are used.

Ordinate 2. *Use of Autoclaves or pressure apparatus generating more than 50 lbs. per sq. in. pressure.* This refers to the type of operation in which the reaction is carried on in a closed container.

The materials are put in, apparatus closed, reaction incited (usually by heat) pressure is created, pressure reduced at completion of reaction.

Alkylation generating pressures of more than 50 lbs. per sq. in. at any time during the process. The process of introducing a hydrocarbon radical (such as methyl CH_3, ethyl C_2H_5, butyl C_4H_9) into a compound in place of hydrogen. The alcohols, with hydrochloric acid, or methyl or ethyl chloride, also methyl or ethyl sulphate, are most commonly used, and the operation is frequently effected at elevated temperature under pressure in an autoclave.

Processes generating or using the following intensely poisonous gases or substances.

Arseniuretted Hydrogen
Arsine
Calcium Cyanide
Carbon Monoxide
Cyanogen
Ethyl Phosphine
Hydrocyanic Acid
Hydrogen Phosphide
Lead Compounds (see Table A-1)
Nicotine
Phosgene
Phosphine
Phosphuretted Hydrogen
Potassium Cyanide
Potassium Nitrocyanide
Prussic Acid
Sodium Cyanide

APPENDIX IV

Chemical Processes Recognized in the Chemical Plan.

Ordinate 1. *Nitration.*

Ordinate 2. *Use of Autoclaves or pressure apparatus generating more than 50 lbs. per sq. in. pressure.*

Alkylation under pressure.

Processes generating or using intensely poisonous gases or substances.

Ordinate 3. *Dry grinding and pulverizing of dyes.*

Distillation involving substances having a flash-point below 125°F.

Reduction of organic compounds followed by distillation.

Oxidation.

Use of powerful oxidizing agents.

Sulphonation.

Compression of gases.

Processes generating or using highly poisonous substances.

Ordinate 4. *Halogenation.*

Amidation.

Alkylation not under pressure.

Processes involving the generation or use of strongly caustic, corrosive or poisonous substances.

Ordinate 5. *Processes involving the generation or use of slightly caustic, corrosive or poisonous substances.*

Ordinate 6. *Processes not explosive or flammable and which do not generate or require the use of any caustic, corrosive or poisonous materials.*

APPENDIX V

EXAMPLE NO. 1

Product: Aniline Oil.

Raw Materials: Benzol
Iron Filings
Hydrochloric Acid
Mixed Acid

Process: Benzol (benzene) is washed and nitrated with mixed acid. The resulting nitro benzol is reduced by the action of iron filings and hydrochloric acid, the product, aniline oil, being recovered by distillation.

In this particular case, the most dangerous raw material from the standpoint of flammability or explosiveness is Benzol. This substance has a flash-point of approximately 20° F. and falls in Abscissa (B). The other raw materials or the product would not in this case receive consideration inasmuch as they are less flammable than Benzol.

The most dangerous operation is the nitrating process which falls in Ordinate (1). None of the other processes involved will receive consideration in this case as they are less hazardous than nitration.

The rate for these operations would be taken from the Plan where Abscissa (B) and Ordinate (1) cross.

EXAMPLE NO. 2

Product: Silicate of Soda

Raw Materials: Silica (sand)
Soda Ash

Process: Silica and soda ash are melted together in a coal-fired retort. The resulting product is run by gravity to an absorber containing water. Here the silicate of soda is dissolved and later evaporated to the proper consistency.

In this case the Raw Materials and Product are non-flammable, Abscissa (D). The process involves the use of soda ash, which is considered "slightly caustic" and the rate would be taken from the point where Ordinate (5) crosses Abscissa (D).

APPENDIX VI

EXAMPLE OF AVERAGE RATING

Products:	Sulphuric Acid Barium Nitrate Nitro Benzol
Raw Materials:	Pyrites Sulphur Sodium Nitrate Barium Carbonate Benzol Nitric Acid
Process:	Pyrites or sulphur or both are burned and the sulphur dioxide gases produced are converted by reaction with the sodium nitrate into sulphuric acid gases which when condensed in lead chambers or by "contact" with catalyzer become sulphuric acid. Barium carbonate when reacted upon by nitric acid produces barium nitrate. This crystallized, filtered and dried is in commercial form. The agitation of benzol and nitric acid produces nitro benzol. This product is washed and distilled and redistilled until purified.

This example assumes that the several products are manufactured separately as defined under the exception to paragraph 5 of the "Principles Underlying the Plan."

The manufacture of sulphuric acid is a manual classification—Acid Mfg. (heavy) 4548; consequently this process should be given the rate for that classification.

For the production of barium nitrate, all the raw materials and the product have flash-points above 125° F., therefore Abscissa (D) applies. The product, however, is an oxidizing agent. Ordinate (3) and Abscissa (D) will consequently determine the rate.

In producing nitro benzol, the benzol is the most flammable of the Raw Materials or Product. Abscissa (B) will then apply. The process involves the dangerous operation of nitration and so will be considered under Ordinate (1). The intersection of Abscissa (B) and Ordinate (1) will give the rate.

The rate of the plant manufacturing the products herewith mentioned can now be established by averaging the rates

APPENDIX VI—(Continued)

for the classification "Heavy Acid Manufacturing" and those produced by the plan, Abscissa (D) Ordinate (3) and Abscissa (B) Ordinate (1). To indicate the method of calculating the average rate let us assume the following conditions:

Operation	Employees*	Rate
(a) Acid Mfg.	20	$4.01 (No. 4548)
(b) Barium Nitrate	60	4.25 (D—3)
(c) Nitro Benzol	10	8.47 (B—1)
	90	

To establish average rate for the operations proceed as follows:

(a)	$4.01 x 20 (Employees)	= 80.20
(b)	4.25 x 60 "	=255.00
(c)	8.47 x 10 "	= 84.70
		419.90

$\frac{419.90}{90} = 4.67 =$ Average rate for all plant operations.

*This includes *all* employees in the building or structure to which the partial rate applies.

Selection of Code Number:

The classifier will find in this case that either of codes 4807, 4810, 4813 or 4816 as they each carry a rate of $4.97 which is the nearest rate to the average rate determined, $4.67 would meet the requirements. However, 4810 should be selected because that corresponds to the ordinate of the process involving the most employees. *The actual Code Number to be assigned will be* 4870 *which is* 60 *numbers higher than the one selected from the rate sheet.*

NOTE: The rates used in this example were those in effect in New York in 1929.

CHEMICAL RATING PLAN

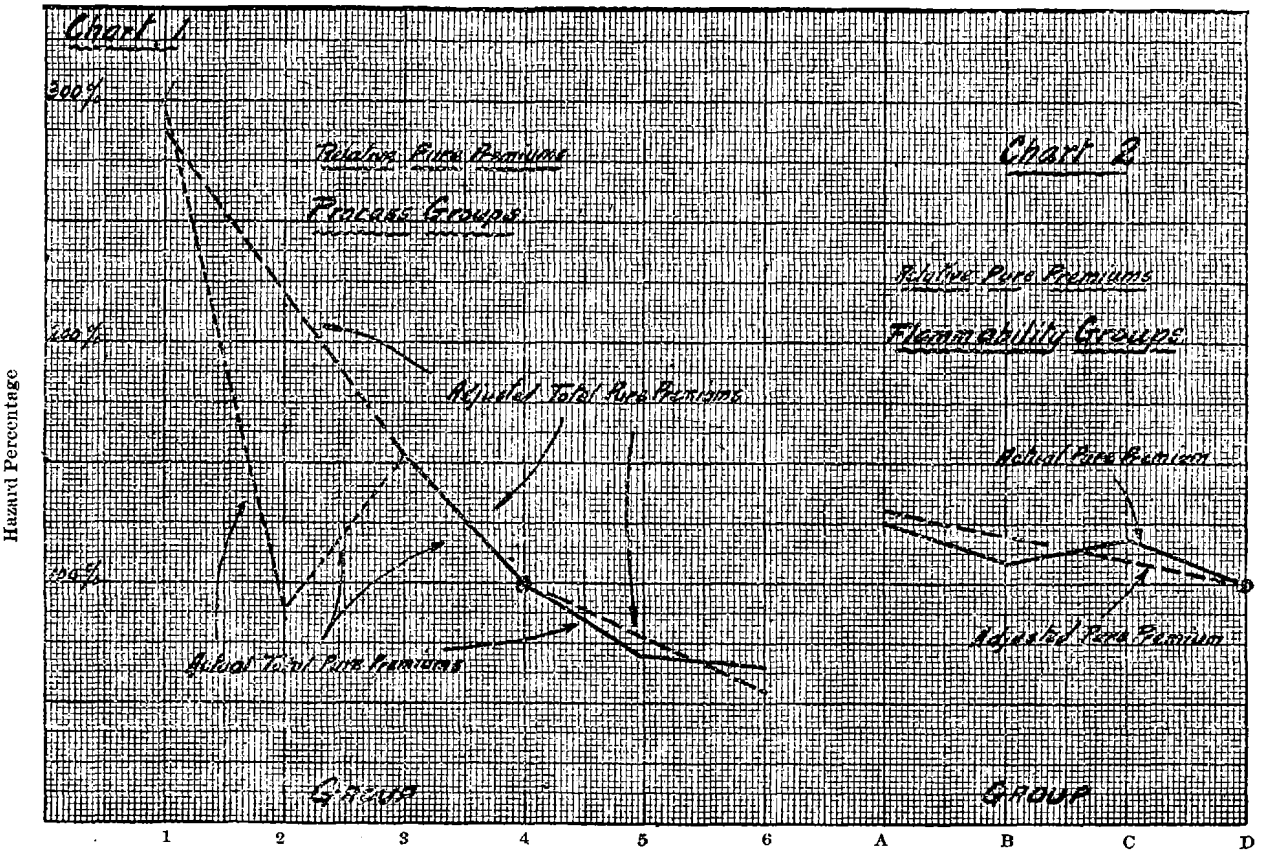
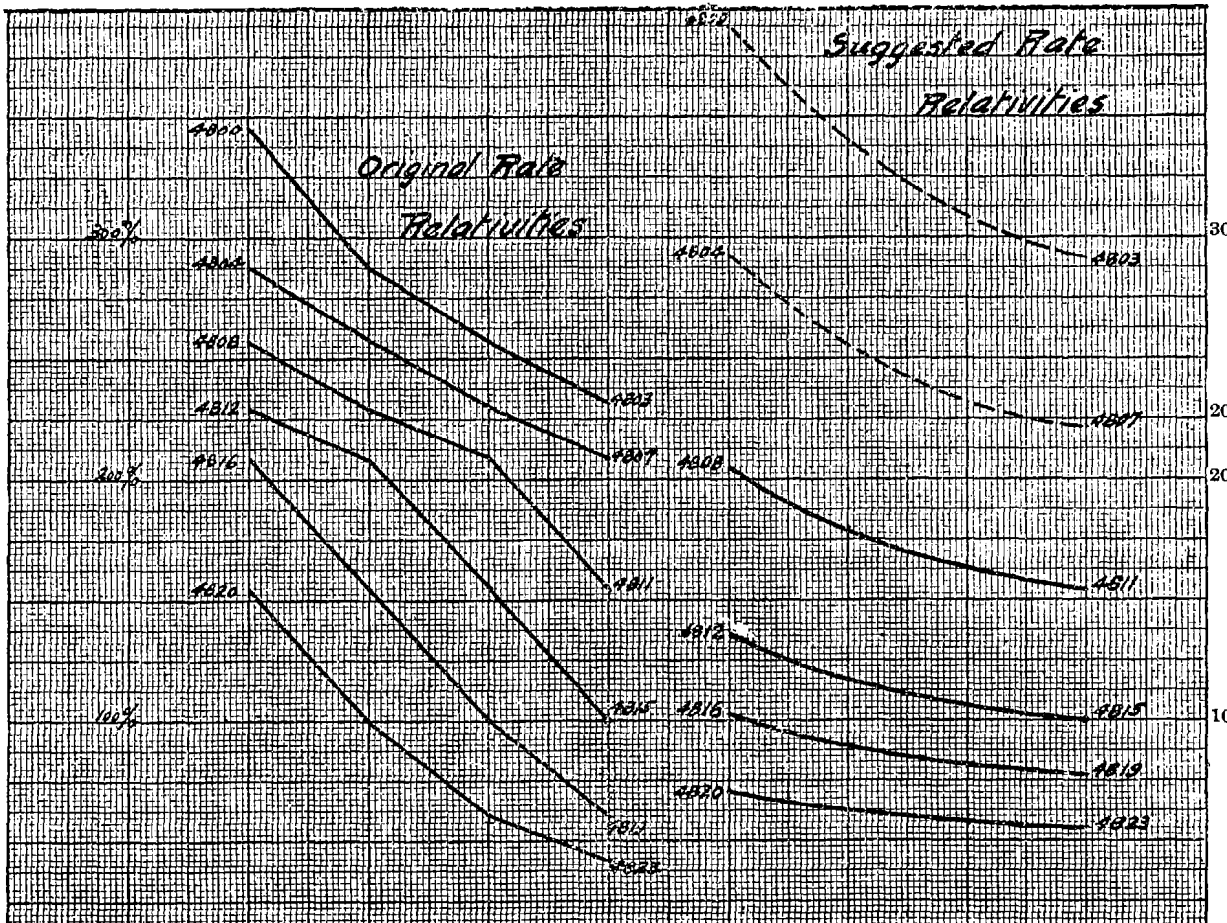


Chart 3 CHEMICAL RATING PLAN



MARRIAGE AND BIRTH INSURANCES IN FRANCE *

BY

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I. History

Birth and marriage insurances prior to the supervisory and regulatory law of May 26, 1921

It is now more than forty years since, as a sequel to writings of certain economists, there developed in France the idea that it would be of social value to create, side by side with the existing combinations of contingencies covered by insurance upon lives, new arrangements which would afford the benefit of insurance at those critical moments in the life of the family when the need for them arises.

These insurances would, for example, guarantee a child in the event of his or her eventual marriage a sum of money to assist in setting up the new household. Or, such insurance might guarantee to a young household a sum which would become due at the birth of each child in the home, so as to compensate in some degree the increase in expenses occasioned by the arrival of the child.

It is to meet these requirements and others that may present themselves in the life of the family, that marriage and birth insurance is designed.

The first French society of the kind here contemplated was founded by Frederic Nogues in 1900 under the name "La Famille Française," but this society had only an ephemeral existence.

Other attempts were made subsequently to launch enterprises of similar nature, but failed before the companies were formed.

* Presented by invitation. Translated into English by Dr. Alfred James Lotka. Incidental notes by E. W. Kopf.

After 1910, there were founded successively several societies for marriage insurance, as follows:

Society	*Year founded*
La Société Anonyme: "L'Épargne Dotale" at Paris	(1913)
La Société Mutuelle: "L'Avenir Familial" at Paris	(1910)
La Société Mutuelle: "La Dotation Française" at Lyons	(1919)
La Société Anonyme: "La Dot" at Lyons	(1920)

The premium systems of these various societies were established on more or less empirical, or at any rate on unpublished technical bases. In other countries, the movement for family insurance has been under way for many decades. Cornelius Walford in his article "Family Insurance" (*Insurance Cyclopedia*) described the early efforts in this direction in England since 1825. In the United States, the idea of family insurances has appeared sporadically, but in each instance approval to conduct such insurances has been denied. Over the next few decades much will be heard of family insurance projects based upon sound statistical and actuarial research. This applies particularly to sickness, accident and medical cost covers. Other historical information is given in the bibliography.

II. The French Supervisory and Regulatory Law of May 26, 1921 *

Since the technical operation of a society practicing this kind of insurance is, in many points, analogous to that of life insurance companies, and since, furthermore, it was desirable that the insured should benefit from the same guarantees as to solvency and the performance of contracts as are given to persons carrying life insurance, the French parliament thought it desirable to extend to societies which undertake to provide marriage and birth insurances the prescriptions of the law of March 17, 1905, which subject the life insurance companies to government control. Hence the regulatory law of May 26, 1921, affecting these marriage and birth insurance societies.

* See text in Paul Sumien's work, noted in bibliography, on the place of birth and marriage insurance in the French program of terrestrial and personal insurance covers.

Decree of June 22, 1921. By the decree of June 22, 1921, made in accordance with the law of May 26, 1921, the Ministry of Labor fixed the actuarial prescriptions for the operation of these societies. These prescriptions by decree comprise more particularly the following:

Article I. The basis for premiums as well as for the corresponding mathematical reserves shall be calculated at minimum as follows:

1. *Interest rate assumed*: The interest rate to be 4¼ per cent.
2. *Mortality tables assumed*: Table to be the R. F. Table*; however, in case the payment of the periodic premiums should be subject to the survival of a third person who is not a beneficiary to the amounts payable in the case of marriage or birth of a child, use should be made of the A. F. Table.*
3. *Marriage and birth tables*: The marriage and birth rates shall be deduced from the results of actual experience and of the annual movement of the population dating from the year 1900.
4. *Expense provision*: Management and acquisition costs: A charge of four per cent. of the gross premium for cost of operation, and of six per cent. of the gross premium is allowed for cost of acquisition and of collection.

Article II. The mathematical reserves must not be less than those for net premiums, equal to the gross premiums calculated as stated above, minus the charge estimated to cover the cost of acquisition and collection.

In fact Article II provides that the obligatory mathematical reserves—so-called inventory reserves—must amount to $\frac{4}{90\text{ths}}$ (4.444%), in excess of the mathematical reserves computed on the pure premiums.

* The abbreviations R. F. and A. F. which are in constant use denote, respectively, the tables *Rentiers Français* and *Assurés Français*, which are drawn from the combined experience of four French companies. Copies of these tables will be found in M. M. Dawson, Practical Lessons in Actuarial Science, 1905, Vol. II, pp. 208-223.

Marriage and Birth Tables

It is evident that the operation of societies of this kind requires the use of marriage and birth tables, hence the Ministry of Labor in Article I, Section 3 of the decree indicates under what conditions these tables should be prepared.

Owing to the very recent origin of the existing societies it would not be possible to construct so-called experience tables, that is, tables based on the statistics of the experience of the companies. It was, therefore, necessary to rest so far as possible upon statistical information available in the official statistics published annually regarding the movement of population in France, and upon the results of the quinquennial censuses of the population of France.

A number of years ago a French actuary, Mr. Eugène Gaillard,* published a thesis presented in candidacy for associate membership in the French Institute of Actuaries, dealing with nuptiality and natality. This was a very complete technical monograph entitled "L'Assurance au Mariage, et l'Assurance a la Natalité" ("Marriage and Birth Insurance"). The author had constructed, upon the basis of statistical data analogous to those indicated by the Ministry of Labor in its decree of June 22, 1921, a marriage table for each of the two sexes; to this he appended commutation tables by means of which various interesting problems in the field of marriage probabilities can be solved. He also gave actuarial formulae regarding the principal kinds of marriage insurance.

Unfortunately, the statistical work of Eugène Gaillard could not be used according to the provisions of the law, for this actuary had based his work on the quinquennial censuses and the annual movement of the population since 1891, whereas the decree prescribes that there shall be used as statistical data only those for the years from 1900 on.

The Ministry of Labor was, therefore, led to undertake for itself the preparation of marriage and birth tables, such as were called for in the provisions of the law, utilizing in the construction of these tables official statistics within the time limits fixed by the decree. The results have been published by the French

* Gaillard's works are in the collection of the Insurance Society of New York, the author's gift transmitted by Mr. Balu.

Ministry of Labor* in a report designated as Recueil No. 10, in which will be found the technical rules for the construction of these tables and also all the actuarial data useful in establishing premiums and for the evaluation of reserves for the principal combinations of contingencies in marriage and birth insurance.

These tables were prepared under the direction of Mr. Louis Weber, the Assistant Chief of the Supervisory Insurance Department of the Ministry of Labor, and Vice-President of the French Institute of Actuaries, who, incidentally, made a summary report on the work to the French Institute of Actuaries. This report has since appeared in the Bulletin of the Society (Bulletin No. 116, March, 1924).

In 1926, Mr. Eugène Gaillard, amplifying the first study made and published by him in 1913, and using this time the tables of the Ministry of Labor, published a complete brochure under the title "Control and Technique of Marriage and Birth Insurance", in which he indicates the formulae of the principal combinations of contingencies that arise in connection with such insurances. Mr. Gaillard also gives a number of basic tables.†

III. Developments Subsequent to the Law of May 26, 1921

Subsequent to the promulgation of the law of May 26, 1921, the existing societies requested and obtained registration according to its provisions.

Two further societies were founded at this time, "La Maternelle Française," in Dreux and "La Famille," in Paris. The last-mentioned society had only a very short life. Certain other societies relinquished their portfolios and discontinued their operations.

Since then the Société Anonyme "L'Avenir Familial" has been founded in Paris.

At the present time there remain in existence only three societies, and it is to be noted that each of them functions in con-

* Recueil de documents relatifs aux Assurances sur la vie par le Ministère du Travail. No. 10. Tables de Nuptialité et de Natalité. Paris. Imprimerie Nationale. 1922. In collection of Insurance Society of New York.

† Controle et Technique des Assurances Nuptialité-Natalité. Paris. Librairie des Assurances. 1926.

nection with another society for insurance upon lives or for capitalization (likewise subject to government control).

These three societies are as follows: (1) La Société Anonyme "L'Épargne Dotale", the name of which has just been changed to "La Dotale," which functions in connection with the capitalization society "L'Épargne Mutuelle"; (2) the Société Anonyme "La Maternelle Française" which has taken up the portfolio of the two Lyons societies: "La Dotation Française" and "La Dot". In connection with this society "Maternelle Française" there functions a life insurance company, "La Maternelle-Vie"; (3) the Société Anonyme "L'Avenir Familial", which has taken over the portfolio of the mutual society "L'Avenir Familial". This society is at the present time still under the direction of the founder of the mutual society, Mr. Victor Pougez, who is also the founder of a society called "Avenir Familial Vie".

Status as of December 31, 1930. On December 31, 1930, the sums insured by three companies were about 95,000,000 francs and the 1930 new business amounted to about 20,000,000 francs.

The exposition which will now be made is only an abridged reproduction of the actuarial studies which we have just cited and to which reference can always be made. We shall here limit ourselves to indicating along broad lines the actuarial-technical and practical aspects of the problems of marriage and birth insurance. We have conserved the original notation employed by the authors.

IV. Actuarial Basis of Marriage Insurance

(a) *Annual Nuptiality Rate.* For the technical operation of marriage insurance it is first necessary to know the annual nuptiality rate and to establish a marriage table.

The annual nuptiality* rate λ_x is defined as follows:

$$\lambda_x = \frac{m_x}{W_x} \tag{1}$$

where m_x is the number of marriages taking place between the ages x and $x+1$ among a group of W_x single persons of age x and of the sex under consideration.

* This *nuptiality* rate defined by equation (1) is the probability for a single person of specified sex and at age x of marrying within one year.

If we consider, on the other hand, by way of comparison, a mortality table and denote by V_x the number living at age x, and if we write

$$\alpha_x = \frac{W_x}{V_x} \tag{2}$$

where α_x is the ratio of single persons W_x at age x to the total number V_x of persons of the same sex and same age, and if, further, it is assumed that the mortality is the same for single persons as for the total population, then we have the following relations between the values of α_x and the annual nuptiality rate λ_x:

$$1 - \lambda_x = \frac{\alpha_{x+1}}{\alpha_x} \tag{3}$$

$$\lambda_x = \frac{\alpha_x - \alpha_{x+1}}{\alpha_x} \tag{3a}$$

This relation follows from the equation

$$W_x\, p_x\, (1 - \lambda_x) = W_{x+1} \tag{4}$$

or, since

$$W_x = \alpha_x\, V_x$$

$$\alpha_x\, V_x\, p_x\, (1 - \lambda_x) = \alpha_{x+1}\, V_x\, p_x \tag{4a}$$

where p_x denotes the probability of surviving one year at age x.

(b) *Marriage Tables.* To compute the marriage tables, the Ministry of Labor set out from the expression

$$\lambda_x = \frac{m_x}{W_x} \tag{1}$$

in which the numerator m_x is obtained from the statistics of annual marriages in France given in five year age groups. The denominator W_x, which represents the number of single persons, is derived from quinquennial census reports in five-year age groups.

For smoothing the crude nuptiality rates an interpolation formula has been developed which will be found described in all important details in the Recueil No. 10 (page 7) cited above. By means of this interpolation formula it has been possible to derive adjusted or smoothed annual nuptiality rates which will be found in the Appendix of this paper together with the numerical values of the ratios α_x (see Appendix, Table II and IIa).

Inasmuch as the minimum age required for legal marriage in France is fifteen years for women and eighteen years for men, the nuptiality rates in the table begin at ages fifteen and eighteen, respectively, for females and for males. Furthermore, these rates have been cut off for both sexes at the age of fifty, since above this age the nuptiality rate for both sexes may be regarded as practically zero.

From the annual nuptiality rates λ_x it has been possible to derive step by step the numerical values of the ratios α_x, α_{x+1}, α_{x+2}, $\cdots$ by virtue of the relation (3), it being understood that for the ages fifteen and eighteen, according to sex, and for all ages below this, the corresponding ratio is unity, because below these ages the number of single persons W_x is identical with the number of persons living V_x according to the particular life table chosen.

The numerical value of the ratios α_x, α_{x+1}, $\cdots$ enables us to construct a table of single persons living at age x since we have

$$W_x = \alpha_x V_x \tag{2}$$

As a complement of this table of single persons W_x surviving to age x it is easy to determine for the same age x the number of persons $W_x - W_{x+1}$ which are eliminated during the current year of life, these eliminations being caused on the one hand by marriages m_x and on the other hand by deaths ${}^c d_x$ among single persons, the symbol ${}^c d_x$ denoting the number of single persons of the sex under consideration who die between the ages x and $x+1$. We have, then,

$$W_x - W_{x+1} = m_x + {}^c d_x \tag{5}$$

or, in view of (1), (2) and (3)

$$m_x = \lambda_x W_x = \frac{\alpha_x - \alpha_{x+1}}{\alpha_x} W_x = (\alpha_x - \alpha_{x+1}) V_x$$

hence

$$m_x = (\alpha_x - \alpha_{x+1}) V_x \tag{6}$$

whence we deduce from (5) and (6)

$$W_x - W_{x+1} = \alpha_x V_x - \alpha_{x+1} V_{x+1} = (\alpha_x - \alpha_{x+1}) V_x + {}^c d_x$$

and from this

$${}^c d_x = \alpha_{x+1} (V_x - V_{x+1}) \tag{7}$$

the expression (5) which defines the law of decrement for the group of single persons is, therefore, given by the formula

$$W_x - W_{x+1} = (\alpha_x - \alpha_{x+1})\, V_x + \alpha_{x+1}\,(V_x - V_{x+1}) \quad (5a)$$

A complete marriage table should show, it seems to us, the various elements indicated above, that is to say, the number W_x of single persons surviving to age x; the number m_x of marriages taking place between the ages x and $x+1$ and the number of deaths ${}^c d_x$ which occur between these same ages among the members of the group who have remained single during the year.

So far as we know these data have not been published. They are essentially of formal interest and without any great practical utility.

(c) *Commutation Table R. F. at 4¼%, Covering Marriage.*

The situation is very different as regards the commutation tables. These have been prepared on the basis of an interest rate of 4¼% and the elements of the R. F. table combined with the nuptiality elements.

These tables naturally end at age fifty in view of the facts set forth above.

If we denote in the usual notation by the letters D_x, N_x, C_x, R_x, M_x, the commutation columns corresponding to a mortality table V_x, the commutation terms, corresponding to the marriage table with $t = .0425$, are as follows:

(d) *Commutation in Case of Survival.*

$${}^c D_x = W_x\,(1+t)^{-x} = \alpha_x\, V_x\,(1+t)^{-x} = \alpha_x\, D_x \quad (8)^*$$

$${}^c N_x = \sum_{p=0}^{p=50-x} \alpha_{x+p}\, D_{x+p}, \text{ or, more simply, } \Sigma\, \alpha_{x+p}\, D_{x+p} \quad (8a)$$

Note: In this formula, and the other summation formulae which follow, we shall omit the indications of the limits of summation on the understanding that they remain the same throughout.

* The author's original notation has been retained throughout. For a glossary showing the corresponding English notation see Appendix. The letter t (*taux d' interêt*) corresponds to i of our customary notation.

(e) *Commutation in Case of Death while Unmarried.* In view of (7)

$$ {}^{c}C_x = {}^{c}d_x\,(1+t)^{-x-\frac{1}{2}} = \alpha_{x+1}\,C_x \tag{9} $$

$$ {}^{c}M_x = \Sigma\ {}^{c}C_{x+p} \tag{9a} $$

$$ {}^{c}R_x = \Sigma\ {}^{c}M_{x+p} \tag{9b} $$

(f) *Commutation in Case of Marriage.*

$$ {}^{m}C_x = m_x\,(1+t)^{-x-\frac{1}{2}} \tag{10} $$

$$ {}^{m}M_x = \Sigma\ {}^{m}C_{x+p} \tag{10a} $$

$$ {}^{m}R_x = \Sigma\ {}^{m}M_{x+p} \tag{10b} $$

It may be noted that, in view of (6), ${}^{m}C_x$ may equally well be expressed as a function of the commutation terms in case of survival and in case of death in the unmarried state

$$ {}^{m}C_x = (1+t)^{-\frac{1}{2}}\,{}^{c}D_x - {}^{c}C_x - (1+t)^{\frac{1}{2}}\,{}^{c}D_{x+1} \tag{10c} $$

(g) *Commutation in Case of Elimination by Marriage or Death.* We deduce from (10c)

$$ {}^{s}C_x = {}^{m}C_x + {}^{c}C_x = (1+t)^{-\frac{1}{2}}\,{}^{c}D_x - (1+t)^{\frac{1}{2}}\,{}^{c}D_{x+1} \tag{11} $$

and since

$$ W_x = \alpha_x\,V_x $$

we have

$$ {}^{s}C_x = (1+t)^{-\frac{1}{2}}\,\alpha_x\,D_x - (1+t)^{\frac{1}{2}}\,\alpha_{x+1}\,D_{x+1} \tag{11a} $$

Furthermore, if we have

$$ \alpha_x = \alpha_{x+1} = 1 $$

as is the case for ages below the age of nubility, we find the formula

$$ C_x = (1+t)^{-\frac{1}{2}}\,D_x - (1+t)^{\frac{1}{2}}\,D_{x+1} $$

Note: It should be recalled that according to common custom the amounts in case of death are supposed to be payable at the time of death, which on the average, is mid-year, whence the factor $(1+t)^{-\frac{1}{2}}$ is introduced in the formulae.

V. Elementary Combinations of Contingencies of Marriage

The aforesaid fundamental data having been established, we shall now proceed to enumerate the most interesting elementary combinations of marriage contingencies and we shall at the same time indicate their actuarial expression by means of the commutation terms defined above.

We shall give in an Appendix certain tables setting forth the numerical values, for each of the two sexes, of several of these combinations.

We shall suppose in the formulae that the attained age at which the insurance is to terminate is the age ω, and, in the numerical applications, this age will be thirty-five years, the age generally adopted as the extreme limit of contracts issued by the companies. In this case $\omega = 35$. The following formulae give the single premium for these combinations:

1. The amount payable in case of survival in the unmarried state to age ω

$$\frac{{}^{c}D_{\omega}}{{}^{c}D_{x}} \text{(See Appendix, Table IV)} \tag{12}$$

2. The amount payable in case of marriage before age ω

$$\frac{{}^{m}M_{x}-{}^{m}M_{\omega}}{{}^{c}D_{x}} \text{ (See Appendix, Table IV)} \tag{13}$$

3. Amount payable in case of marriage before age ω or, at the latest, in case of survival in the unmarried state at age ω

$$\frac{U_{x}}{{}^{c}D_{x}} = \frac{{}^{m}M_{x}-{}^{m}M_{\omega}+{}^{c}D_{\omega}}{{}^{c}D_{x}} \tag{14}$$

In view of the importance of this combination we shall designate it by the expression

$$\frac{U_{x}}{{}^{c}D_{x}}$$

4. Amount payable in case of death if death takes place before age ω and if at the moment of death the insured is still unmarried.

In view of the expression (9a) we have

$$\frac{{}^{c}M_{x}-{}^{c}M_{\omega}}{{}^{c}D_{x}} \text{(See Appendix, Table IVa)} \tag{15}$$

5. If, similarly, we consider the case of n annual premiums reimbursable in case of death before age ω in the unmarried state, we have, similarly, in view of expression (9b)

$$\frac{{}^{c}K_{x}}{{}^{c}D_{x}} = \frac{{}^{c}R_{x}-{}^{c}R_{x+n}-n\,{}^{c}M_{\omega}}{{}^{c}D_{x}} \tag{16}$$

In view of its importance we designate this expression by

$$\frac{{}^{c}K_{x}}{{}^{c}D_{x}}$$

6. Similarly, the present worth $\frac{{}^{c}A_x}{{}^{c}D_x}$ of a temporary annuity for n years payable in advance, but only so long as the insured remains unmarried, will be

$$\frac{{}^{c}A_x}{{}^{c}D_x} = \frac{{}^{c}N_x - {}^{c}N_{x+n}}{{}^{c}D_x} \tag{17}$$

We shall not here enter into the case of the multiple combinations which might be taken into consideration and for which the formulae can readily be established.

VI. Marriage Endowment Policy

We shall conclude by giving the necessary formula for setting up the schedule of rates for the type of policy which is most generally written by the companies and which may be designated by the name *Marriage Endowment Policy*:

Amount payable at the time of marriage or at the latest at age ω.

Premiums payable only during n years and returnable in case of death before marriage or at age ω.

If we designate by π'' the gross annual premium of the policy, and by $\frac{E_x}{{}^{c}D_x}$ the part of the loading added to the net premium which is not proportional to the premium (and the rate of which may vary according to the company and the schedule of rates),

if we further designate by $\varepsilon\,\pi''$ the part of this loading which is proportional to the annual premium π'',

and if we take into account the formulae given above, in particular formulae (14), (16), (17) we have

$$(1-\varepsilon)\,\pi'' = \frac{U_x + E_x}{{}^{c}A_x} + \frac{\pi''\,{}^{c}K_x}{{}^{c}A_x} \tag{18}$$

hence

$$\pi'' = \frac{U_x + E_x}{(1-\varepsilon)\,{}^{c}A_x - {}^{c}K_x} \tag{19}$$

The pure premium π is

$$\pi = \frac{U_x}{{}^{c}A_x} + \pi''\frac{{}^{c}K_x}{{}^{c}A_x} \tag{20}$$

In the case that the loading is proportional solely to the gross premium, we have $E_x = 0$, and the formula (19) becomes

$$\pi'' = \frac{U_x}{(1-\varepsilon)\,{}^cA_x - {}^cK_x} \tag{20a}$$

and the pure annual premium reduces to

$$\pi = (1-\varepsilon)\,\pi'' \tag{20b}$$

If it is desired to apply the minimum schedule of rates provided by the decree, it is only necessary, in the formulae (20a) and (20b) to put $\varepsilon = .10$.

It should, by the way, be noted that whatever be the charge adopted, the annual inventory premium π' is always

$$\pi' = \left(1 + \frac{.4}{9}\right)\pi = 1.04444\,\pi \tag{21}$$

The Marriage Endowment Policy discussed above is quite frequently modified by the stipulation that the annual premiums shall cease and that the contract shall expire in the case of the death of a third person termed "contractant" (usually the father) who is responsible for the payment of the premiums.

In this case the probability of survival of this person must be introduced. According to the decree, the table known as the A. F. experience table must be applied to this person.

It would then be necessary to construct complementary commutation tables, into which the actuarial elements of this person would enter.

We shall not here discuss the formulae relating to this special form of policy.

VII. Tariffs and Contracts of Marriage Insurance

Although the number of theoretically possible combinations of contingencies is considerable, those combinations which can actually become objects of insurance in practice are rather limited, for in marriage insurance any initial selection, that is to say, selection at the time of signing the contract, would with certainty work to the disadvantage of the companies. It is clear, for example, that if the company accepted marriage insurance on a young girl twenty years of age, there would be strong presumption that this insurance was taken out by the applicant with

the prospect of an early marriage in view. This would no longer be insurance, but speculation.

In practice the companies offer only combinations (policies) which approach more or less that which was expounded above under the name of Marriage Endowment Policy, with or without cessation of payment of the annual premiums, and expiration of the contract, in case of decease of a third contracting party responsible for the payment of the premiums.

Lastly, in order to preclude all danger of speculation, the companies accept for insurance only children whose age is sufficiently far removed from the age of marriage. In practice the schedule of rates stops at age ten for females and thirteen for males, that is to say, five years before the insured attains the legal age of marriage.

VIII. Mathematical Reserves

We shall not here discuss the computation of the mathematical reserves, the evaluation of which presents no technical difficulty. We will only draw attention to the fact that the increase with time of the value of the mathematical reserve of a marriage insurance contract is far from presenting the same regular progression as that of a contract of insurance upon lives.

During the first few years of the contract, that is to say, during the deferred period, the period during which, owing to the age of the child, there is no possibility of marriage, the contract is in reality a contract for "Pure Endowment with return."

But when the insured child attains the legal age of marriage and, more particularly, a few years after the age when the effective nuptiality rate is high, the character of the mathematical reserves becomes modified, their value increases only slowly, especially if the contract expires, since a large part of the receipt in premiums and interest is absorbed by the risk of marriage which at certain ages goes so far as to exceed a rate of twenty per cent. annually.

IX. Cash Surrender Value and the Value Applied to Purchase Paid-up Insurance for a Reduced Amount (hereinafter termed Reduction Value)

The same irregularity in the progress-of-time element presents itself in the succession of cash surrender values and reduction values of marriage insurance.

We shall here conclude our summary exposition; marriage insurance is as yet much too recent in France to enable us to foresee its future.

Will the experience of years enable us to establish this insurance on a solid statistical basis? Personally, I rather doubt it; for to a far greater extent than the mortality on which life insurance is based, does the nuptiality rate feel the repercussion of economic conditions and the moral influences of the period covered by the statistics. Now, the frequency of marriages and the variations in the age of one or the other of the two parties contracting marriage, are data which vary from one epoch to another and from one social class to another, and the deductions drawn from the statistics, even though they may be perfectly established on the basis of the recent past, do not enable us to make reliable forecasts for the future.

X. Birth Insurance

(a) *Annual Reproductive Rate* (of married persons).

If we designate by:

n_x the number of legitimate live births to a father or mother of age x (that is to say, between age x and $x+1$)

H_x the number of married persons of age x at risk

then we have by definition of the annual *reproductive** rate of married persons

$$\mu_x = \frac{n_x}{H_x} \qquad (22)$$

The number of married persons H_x would be given by the formula

$$H_x = V_x - W_x + \frac{m_x}{4} \qquad (23)$$

* This *reproductive* rate defined by equation (22) is the probability for a married person of specified sex and at age x having a child within a year.

The number H_x of married men or married women at age x capable of giving rise to a birth during the course of the year of age x has been determined hypothetically by adding to the difference

$$V_x - W_x$$

between the number of those living at age x and that of single persons of the same age, one-quarter of the number of marriages contracted between the age x and age $x + 1$, a hypothesis which amounts to assuming a uniform distribution of marriages during the year of age under consideration.

(b) *Birth Tables*

The brochure published by the Ministry of Labor (Recueil No. 10, *op. cit.*) indicates the ways and means by which it has been possible to determine the annual reproductive rates, primarily the *crude rates* and secondly the *adjusted rates*.

There are appended hereto for each sex the adjusted reproductive rates which, like the annual nuptiality rates, have been carried only to the fiftieth year of age.

(c) *Commutation Tables for Birth Insurance*

For the practical application of the data on reproductive rates it has been necessary to construct commutation tables based on an interest rate of 4¼ per cent.; that is to say, $t = .0425$. In conformity with the usual custom, the amounts are assumed payable at the middle of the year of insurance.

We have

$$E_x = n_x (1 + t)^{-x-\frac{1}{2}} \tag{24}$$

or, taking account of (22)

$$E_x = \mu_x H_x (1 + t)^{-x-\frac{1}{2}} \tag{24a}$$

furthermore, the summation term

$$U_x = \Sigma E_{x+p} \quad \text{(See Appendix, Table Va)} \tag{25}$$

To these two commutation columns prepared by the Ministry of Labor, it has seemed interesting to add two complementary columns which have been given by Mr. Eugène Gaillard in his brochure "Control and Technique of Marriage and Birth Insurance"

$$_{\mu}D_x = \mu_x D_x, \quad D_x = V_x (1 + t)^{-x} \tag{26}$$

and the summation

$$_{\mu}N_x = \Sigma \, _{\mu}D_{x+p} \quad \text{(See Appendix, Table Vb)} \tag{26a}$$

(d) *Fundamental Character of Birth Insurance*

What distinguishes birth insurance from other insurances such as life insurance and marriage insurance (the latter contemplating in practice only the first marriage of the insured), is that birth insurance is a form of insurance against a risk subject to repetition.

As the statistical documents which have furnished the materials for the construction of the tables indicate only the number of live-born children of a group of men or women married before the age specified, it follows that the reproductive rates deduced from these tables give simply the probability of the birth of a child at that age, regardless of whether that child was preceded or followed by births of other children to the same insured person.

The computations which will follow are, therefore, based essentially on the assumption that the risk of having a child born, as given in the tables, applies to each birth, irrespective of prior births to the same parent. The payment of the amount of insurance, if made upon some one particular birth, still leaves in force the obligation that the amount may have to be paid again on each subsequent birth.

Note: One could conceive of birth insurance in which the amount of the policy were payable only after the birth of a specified order of child, the first, the second, etc., occurring during the state of marriage of a given person (man or woman); but the tables as at present constructed do not enable us to solve this problem.

In the types of birth insurance termed "repetitive" (*à repetition*), which are the only ones that we shall here study, two principal cases may present themselves:

Case I. The insured of age x is married at the time the contract is made.

The risk of a child being born may exist from the date of the original contract.

The single premium insuring the payment of \$1 on each and every birth arising from the marriage of the insured persons at age x is evidently

$$M_x = \Sigma \frac{V_{x+p}}{V_x} \mu_{x+p} (1+t)^{-p-\frac{1}{2}} \qquad (27)$$

and by virtue of the commutation terms (26) and (26a)

$$\left.\begin{aligned} M_x &= \Sigma\ \frac{\mu_{x+p} D_{x+p}}{D_x} (1+t)^{-\frac{1}{2}} \\ &= \Sigma\ \frac{\mu D_{x+p}}{D_x} (1+t)^{-\frac{1}{2}} \\ &= (1+t)^{-\frac{1}{2}}\ \frac{\mu N_x - \mu N_\omega}{D_x} \end{aligned}\right\} \qquad (28)$$

The assumption is here made that the marital state of the insured is unchanged, for the present computations do not take into account separation, divorce or death of the husband or wife of the insured.

Case II. The insured, of age x, is single on the date of signing the contract.

In order that a birth should take place at age $x+p$ of the insured, it is necessary that at that epoch he or she be married. If H_x is the number of those married at age x, the number of survivors from these persons at age $x+p$ is

$$H_x \frac{V_{x+p}}{V_x}$$

and since the number of those married at age $x+p$ is H_{x+p}, the number of those which entered the married state between the ages x and $x+p$, and which still survive at the age $x+p$, among the group of single persons W_x at age x, is

$$H_{x+p} - H_x \frac{V_{x+p}}{V_x} \qquad (29)$$

The single premium insuring the payment of one dollar at each and every birth arising after the marriage of a person as yet single at age x, but before he or she reaches the age ω, will be

$$\frac{1}{W_x} \Sigma \left(H_{x+p} - H_x \frac{V_{x+p}}{V_x} \right) \mu_{x+p} (1+t)^{-p-\frac{1}{2}} \qquad (30)$$

Now, by virtue of (24a) and (25) the positive term in (30) becomes

$$\frac{1}{{}^cD_x} \Sigma\ E_{x+p} = \frac{U_x - U_\omega}{{}^cD_x}$$

the negative term in (30) can evidently be written

$$\frac{\mu_x H_x (1+t)^{-x} (1+t)^{-\frac{1}{2}}}{W_x (1+t)^{-x}} \Sigma\ \frac{\mu_{x+p} V_{x+p}}{\mu_x V_x} \frac{(1+t)^{-x-p}}{(1+t)^{-x}}$$

whence by virtue of (8), (24a) and (26) we have

$$\frac{E_x}{{}^cD_x} \Sigma \frac{\mu D_{x+p}}{\mu D_x}$$

and by the summations (25) and (26a) the negative term becomes

$$\frac{E_x}{{}^cD_x} \frac{\mu N_x - \mu N_\omega}{\mu D_x}$$

The complete expression therefore becomes

$$\frac{U_x - U_\omega}{{}^cD_x} - \frac{E_x}{{}^cD_x} \frac{\mu N_x - \mu N_\omega}{\mu D_x} \tag{31}$$

If the insured is not yet at a marriageable age at the time the contract is written, the formula given above remains applicable, but in simplified form, since $E_x = 0$ and the formula (31) accordingly reduces to its positive term alone, that is to

$$\frac{U_x - U_\omega}{{}^cD_x}$$

XI. Combinations of Contingencies Offered by the Insurance Companies

It is understood that in practice companies cannot accept marriage insurance on persons already married, nor, for similar reasons, on single persons who have already passed the age of nubility.

If such insurances were issued, only those would actually take out insurance who already foresaw a practically certain benefit, and the laws of probabilities are inapplicable in such a case.

In point of fact, there is at present only one society which issues birth insurance, and even this, as a rule, merely as a complement to marriage insurance.

The typical contract of combined marriage and birth insurance would be one which assured:

1. At the first marriage of the insured the payment of a stated amount.
2. The payment of another stated amount, usually less than under (1), (or an educational allowance) at the birth of each and every legitimate live-born child of the insured.

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APPENDIX

TABLE OF CONTENTS

Commutation Tables

The tables given below have been constructed on an interest rate of four and a quarter per cent., by the aid of the nuptiality and reproductive rates calculated as has been explained in the foregoing, and on the basis of the life table R. F.

TABLE I.

Explanation of Symbols

Marriage Insurance

Author's Notation	English Notation	Definition
x	x	Age of the insured.
V_x	l_x	Number* attaining age x.
W_x	(bl_x)	Number* of single persons attaining age x.
d_x	d_x	Number* dying between ages x and $x+1$.
$q_x = \frac{d_x}{V_x}$	$q_x = \frac{d_x}{l_x}$	Probability at age x of dying within one year.
m_x	$(bm)_x$	Number* marrying between ages x and $x+1$.
$\lambda_x = \frac{m_x}{W_x}$	$(bq)^m_x = \frac{(bm)_x}{(bl)_x}$	Probability at age x of marrying within one year.
$\alpha_x = \frac{W_x}{V_x} = \alpha_{x-1}\,(1-\lambda_{x-1})$	$\alpha_x = \frac{(bl)_x}{l_x} = \alpha_{x-1}\{1-(bq)^m_{x-1}\}$	Proportion single at age x.
${}^c d_x = W_x\,(1-\lambda_x)\,q_x = \alpha_{x+1}\,d_x$	$(bd)_x = (bl)_x\{1-(bq)^m_x\}q_x = \alpha_{x+1}\,d_x$	Number* dying single between ages x and $x+1$.
$D_x = V_x\,(1+t)^{-x}$	$D_x = v^x\,l_x = l_x(1+i)^{-x}$	
$C_x = d_x\,(1+t)^{-x-\frac{1}{2}}$	$\bar{C}_x = v^{x+\frac{1}{2}}\,d_x = d_x\,(1+i)^{-x-\frac{1}{2}}$	
${}^c D_x = \alpha_x\,D_x$	$(bD)_x = \alpha_x\,v^x\,l_x = v^x\,(bl)_x$	
${}^c N_x = \sum_{p=0}^{p=50-x} {}^c D_{x+p}$	${}_{51}(b\mathbf{N})_x = \sum_{p=0}^{p=50-x} (bD)_{x+p}$	
${}^c C_x = {}^c d_x\,(1+t)^{-x-\frac{1}{2}} = \alpha_{x+1}\,C_x$	$(b\bar{C})_x = v^{x+\frac{1}{2}}(bd)_x = \alpha_{x+1}\,\bar{C}_x$	

* In life table cohort.

TABLE I.—*Continued*

Marriage Insurance

Author's Notation	English Notation	Definition
${}^{c}M_x = \sum_{p=0}^{p=50-x} {}^{c}C_{x+p}$	${}_{51}(b\overline{M})_x = \sum_{p=0}^{p=50-x} (b\overline{C})_{x+p}$	
${}^{c}R_x = \sum_{p=0}^{p=50-x} {}^{c}M_{x+p}$	${}_{51}(b\overline{R})_x = \sum_{p=0}^{p=50-x} (b\overline{M})_{x+p}$	
${}^{m}C_x = m_x\,(1+t)^{-x-\frac{1}{2}}$	$(bm\cdot\overline{C})_x = v^{x+\frac{1}{2}}\,(bm)_x$	
${}^{m}M_x = \sum_{p=0}^{p=50-x} {}^{m}C_{x+p}$	${}_{51}(bm\cdot\overline{M})_x = \sum_{p=0}^{p=50-x} (bm\cdot\overline{C})_{x+p}$	
${}^{m}R_x = \sum_{p=0}^{p=50-x} {}^{m}M_{x+p}$	${}_{51}(bm\cdot\overline{R})_x = \sum_{p=0}^{p=50-x} (bm\cdot\overline{M})_{x+p}$	

TABLE I.—*Continued*

Birth Insurance

Author's Notation	English Notation	Definition
$H_x = V_x - W_x + \frac{m_x}{4}$	$(ml)_x = l_x - (bl)_x + \frac{(bm)_x}{4}$	Number* attaining age x exposed to risk of having child in wedlock before attaining age $x+1$.
n_x	Not provided for. Use n_x	Number* of births to parent of stated sex between ages x and $x+1$.
$\mu_x = \frac{n_x}{H_x}$	Not provided for. Use $\mu_x = \frac{n_x}{(ml)_x}$	Probability that a married person age x will have a child before reaching age $x+1$.
$E_x = n_x\,(1+t)^{-x-\frac{1}{2}}$	Not provided for. Use $(n\bar{C})_x = v^{x+\frac{1}{2}}\,n_x$	
$U_x = \sum_{p=0}^{p=50-x} E_{x+p}$	Not provided for. Use ${}_{51}(n\bar{M})_x = \sum_{p=0}^{p=50-x} (n\bar{C})_{x+p}$	

Complementary Columns

$\mu D_x = \mu_x\,D_x$	$D_x^{\mu} = \mu_x\,D_x$
$\mu N_x = \sum_{p=0}^{p=50-x} \mu_{x+p}\,D_{x+p}$	${}_{51}N_x^{\mu} = \sum_{p=0}^{p=50-x} \mu_{x+p}\,D_{x+p}$

* In life table cohort.

NOTE: Compilation by Mortimer Spiegelman.

TABLE II

PROBABILITY AT AGE x OF MARRYING WITHIN ONE YEAR

Age	Males	Females
15 years.....		0.0179
16 —.....		0.0245
17 —.....		0.0340
18 —.....	0.0027	0.0479
19 —.....	0.0067	0.0681
20 —.....	0.0163	0.0964
21 —.....	0.0317	0.1323
22 —.....	0.0527	0.1693
23 —.....	0.0762	0.1945
24 —.....	0.1098	0.1989
25 —.....	0.1521	0.1855
26 —.....	0.1934	0.1644
27 —.....	0.2156	0.1428
28 —.....	0.2128	0.1236
29 —.....	0.1917	0.1076
30 —.....	0.1657	0.0942
31 —.....	0.1420	0.0829
32 —.....	0.1223	0.0732
33 —.....	0.1065	0.0647
34 —.....	0.0937	0.0571
35 —.....	0.0830	0.0504
36 —.....	0.0740	0.0443
37 —.....	0.0661	0.0388
38 —.....	0.0593	0.0340
39 —.....	0.0524	0.0298
40 —.....	0.0465	0.0261
41 —.....	0.0411	0.0230
42 —.....	0.0361	0.0202
43 —.....	0.0317	0.0179
44 —.....	0.0278	0.0159
45 —.....	0.0244	0.0143
46 —.....	0.0215	0.0129
47 —.....	0.0190	0.0118
48 —.....	0.0168	0.0108
49 —.....	0.0150	0.0101
50 —.....	0.0134	0.0093

TABLE IIa

RATIO AT AGE x OF NUMBER SINGLE TO NUMBER LIVING

Age	Males	Females
15 years		1
16 —.....		0.9821
17 —.....		0.9580
18 —.....	1	0.9255
19 —.....	0.9973	0.8812
20 —.....	0.9907	0.8212
21 —.....	0.9745	0.7420
22 —.....	0.9436	0.6439
23 —.....	0.8939	0.5349
24 —.....	0.8258	0.4308
25 —.....	0.7352	0.3451
26 —.....	0.6233	0.2811
27 —.....	0.5027	0.2349
28 —.....	0.3943	0.2013
29 —.....	0.3104	0.1765
30 —.....	0.2509	0.1575
31 —.....	0.2093	0.1426
32 —.....	0.1796	0.1308
33 —.....	0.1577	0.1212
34 —.....	0.1409	0.1134
35 —.....	0.1277	0.1069
36 —.....	0.1171	0.1015
37 —.....	0.1084	0.0970
38 —.....	0.1012	0.0933
39 —.....	0.0952	0.0901
40 —.....	0.0902	0.0874
41 —.....	0.0861	0.0851
42 —.....	0.0825	0.0832
43 —.....	0.0795	0.0815
44 —.....	0.0770	0.0800
45 —.....	0.0749	0.0788
46 —.....	0.0730	0.0776
47 —.....	0.0715	0.0766
48 —.....	0.0701	0.0757
49 —.....	0.0689	0.0749
50 —.....	0.0679	0.0742
51 —.....	0.0670	0.0735

TABLE III

MARRIAGE INSURANCE
COMMUTATION TABLE
MALES

4.25%

X	$^{c}D_x=\alpha_x D_x$	$^{c}N_x$	$^{c}C_x=\alpha_{x+1}C_x$	$^{c}M_x$	$^{c}R_x$	$^{m}C_x=m_{x-\frac{1}{2}}\times(1.0425)$	$^{m}M_x$	$^{m}R_x$	X
1	2	3	4	5	6	7	8	9	10
Yrs.									Yrs.
0	1.000.000	14.903.704,3	35.273,2	156.458,4	1.137.734,2		238.973,8	6.480.483,8	0
1	924.685,8	13.903.704,3	24.893,3	121.185,2	981.275,8		238.973,8	6.241.510,0	1
2	862.608,2	12.979.018,5	17.617,1	96.291,2	860.090,6		238.973,8	6.002.536,2	2
3	810.187,6	12.116.410,3	12.493,7	78.674,8	763.798,7		238.973,8	5.763.562,4	3
4	764.922,1	11.306.222,7	8.889,8	66.181,1	685.123,9		238.973,8	5.524.588,6	4
5	725.031,4	10.541.300,6	6.371,9	57.291,3	618.942,8		238.973,8	5.285.614,8	5
6	689.233,2	9.816.269,2	4.637,3	50.919,4	561.651,5		238.973,8	5.046.641,0	6
7	656.593,1	9.127.036,0	3.472,0	46.282,1	510.732,1		238.973,8	4.807.667,2	7
8	626.425,1	8.470.442,9	2.721,1	42.810,1	464.450,0		238.973,8	4.568.693,4	8
9	598.222,3	7.844.017,8	2.270,7	40.089,0	421.639,9		238.973,8	4.329.719,6	9
10	571.610,4	7.245.795,5	2.038,0	37.818,3	381.550,9		238.973,8	4.090.745,8	10
11	546.311,4	6.674.185,1	1.956,8	35.780,3	343.732,6		238.973,8	3.851.772,0	11
12	522.123,2	6.127.873,7	1.978,0	33.823,5	307.952,3		238.973,8	3.612.798,2	12
13	498.900,3	5.605.750,5	2.062,2	31.845,5	274.128,8		238.973,8	3.373.824,4	13
14	476.541,8	5.106.850,2	2.176,6	29.783,3	242.283,3		238.973,8	3.134.850,6	14
15	454.982,6	4.630.308,4	2.296,1	27.606,7	212.500,0		238.973,8	2.895.876,8	15
16	434.185,4	4.175.325,8	2.400,8	25.310,6	184.893,3		238.973,8	2.656.903,0	16
17	414.133,4	3.741.140,4	2.473,8	22.909,8	159.582,7		238.973,8	2.417.929,2	17
18	394.827,4	3.327.007,0	2.498,6	20.436,0	136,672,9	1.044,1	238.973,8	2.178.955,4	18
19	375.261,7	2.932.179,6	2.465,4	17.937,4	116.236,9	2.462,3	237.929,7	1.939.981,6	19
20	355.166,4	2.556.917,9	2.361,5	15.472,0	98.299,5	5.670,0	235.467,4	1.702.051,9	20
21	332.803,4	2.201.751,5	2.183,3	13.110,5	82.827,5	10.332,6	229.797,4	1.466.584,5	21
22	306.975,0	1.868.948,1	1.940,6	10.927,2	69.717,0	15.844,3	219.464,8	1.236.787,1	22
23	277.050,4	1.561.973,1	1.659,7	8.986,6	58.789,8	20.676,3	203.620,5	1.017.322,3	23

25	206.940,6	1.041.038,5	1.071,6	5.963,8	42.476,3	30.827,5	156.717,2	630.757,6	25
26	167.241,6	834.097,9	832,52	4.892,20	36.512,53	31.678,5	125.889,7	474.040,4	26
27	128.568,4	666.856,3	629,64	4.059,68	31.620,33	27.148,5	94.211,2	348.150,7	27
28	96.116,70	538.287,93	478,39	3.430,04	27.560,65	20.032,2	67.062,7	253.939,5	28
29	72.111,57	442.171,23	373,58	2.951,65	24.130,61	13.539,0	47.030,5	186.876,8	29
30	55.546,50	370.059,66	301,40	2.578,07	21.178,96	9.014,5	33.491,5	139.846,3	30
31	44.152,48	314.513,16	250,41	2.276,67	18.600,89	6.140,4	24.477,0	106.354,8	31
32	36.097,36	270.360,68	213,11	2.026,26	16.324,22	4.323,8	18.336,6	81.877,8	32
33	30.194,87	234.263,32	184,85	1.813,15	14.297,96	3.149,6	14.012,8	63.541,2	33
34	25.697,29	204.068,45	162,77	1.628,30	12.484,81	2.358,2	10.863,2	49.528,4	34
35	22.180,99	178.371,16	145,31	1.465.53	10.856,51	1.803,2	8.505,0	38.665,2	35
36	19.368,30	156.190,17	131,09	1.320,02	9.390,98	1.403,7	6.701,8	30.160,2	36
37	17.070,00	136.821,87	119,48	1.189,13	8.070,76	1.105,0	5.298,1	23.458,4	37
38	15.169,50	119.751,87	109,90	1.069,65	6.881,63	880,95	4.193,11	18.160,26	38
39	13.580,73	104.582,37	101,98	959,75	5.811,98	697,05	3.312,16	13.967,15	39
40	12.243,00	91.001,64	95,512	857,766	4.852,226	557,62	2.615,11	10.654,99	40
41	11.116,53	78.758,64	89,943	762,254	3.994,460	447,43	2.057,49	8.039,88	41
42	10.129,39	67.642,11	85,322	672,311	3.232,206	358,09	1.610,06	5.982,39	42
43	9.279,550	57.512,715	81,525	586,989	2.559,895	288,04	1.251,97	4.372,33	43
44	8.541,495	48.233,165	78,360	505,464	1.972,906	232,52	963,93	3.120,36	44
45	7.893,074	39.691,670	75,610	427,104	1.467,442	188,58	731,41	2.156,43	45
46	7.305,183	31.798,596	73,442	351,494	1.040,338	153,89	542,83	1.425,02	46
47	6.791,454	24.495,413	71,544	278,052	688,844	126,43	388,94	882,19	47
48	6.316,955	17.701,959	69,988	206,508	410,792	103,88	262,51	493,25	48
49	5.887,155	11.385,004	68,756	136,520	204,284	86,518	158,631	230,744	49
50	5.497,849	5.497,849	67,764	67,764	67,764	72,113	72,113	72,113	50

NOTE: In Table III the French system of decimal notation has been retained. In that system periods are used to separate large whole numbers in sets of three figures, and a comma is used where the English system uses a decimal point.

TABLE IIIa

Marriage Insurance
Commutation Table
Females

4.25%

X 1	${}^{c}D_x=a_xD_x$ 2	${}^{c}N_x$ 3	${}^{c}C_x=a_{x+1}C_x$ 4	${}^{c}M_x$ 5	${}^{c}R_x$ 6	${}^{m}C_x=m_{x-\frac{1}{2}}\times(1.0425)$ 7	${}^{m}M_x$ 8	${}^{m}R_x$ 9	X 10
Yrs.									Yrs.
0	1.000.000	13.928.148,2	35.273,2	149.897,1	981.120,4		285.644,6	6.628.014,4	0
1	924.685,8	12.928.148,2	24.893,3	114.623,9	831.223,3		285.644,6	6.342.369,8	1
2	862.608,2	12.003.462,4	17.617,1	89.730,6	716.599,4		285.644,6	6.056.725,2	2
3	810.187,6	11.140.854,2	12.493,7	72.113,5	626.868,8		285.644,6	5.771.080,6	3
4	764.922,1	10.330.666,6	8.889,8	59.619,8	554.755,3		285.644,6	5.485.436,0	4
5	725.031,4	9.565.744,5	6.371,9	50.730,0	495.135,5		285.644,6	5.199.791,4	5
6	689.233,2	8.840.713,1	4.637,3	44.358,1	444.405,5		285.644,6	4.914.146,8	6
7	656.593,1	8.151.479,9	3.472,0	39.720,8	400.047,4		285.644,6	4.628.502,2	7
8	626.425,1	7.494.886,8	2.721,1	36.248,8	360.326,6		285.644,6	4.342.857,6	8
9	598.222,3	6.868.461,7	2.270,7	33.527,7	324.077,8		285.644,6	4.057.213,0	9
10	571.610,4	6.270.239,4	2.038,0	31.257,0	290.550,1		285.644,6	3.771.568,4	10
11	546.311,4	5.698.629,0	1.956,8	29.219,0	259.293,1		285.644,6	3.485.923,8	11
12	522.123,2	5.152.317,6	1.978,0	27.262,2	230.074,1		285.644,6	3.200.279,2	12
13	498.900,3	4.630.194,4	2,062,2	25.284,2	202.811,9		285.644,6	2.914.634,6	13
14	476.541,8	4.131.294,1	2.176,6	23.222,0	177.527,7		285.644,6	2.628.990,0	14
15	454.982,6	3.654.752,3	2.255,0	21.045,4	154.305,7	7.976,4	285.644,6	2.343.345,4	15
16	426.413,5	3.199.769,7	2.300,0	18.790,4	133.260,3	10.232,2	277.668,2	2.057.700,8	16
17	396.739,8	2.773.356,2	2.289,5	16.490,4	114.469,9	13.211,2	267.436,0	1.780.032,6	17
18	365.412,8	2.376.616,4	2.207,8	14.200,9	97.979,5	17.142,6	254.224,8	1.512.596,6	18
19	331.575,8	2.011.203,6	2.043,6	11.993,1	83.778,6	22.115,3	237.082,2	1.258.371,8	19
20	294.400,6	1.679.627,8	1.798,1	9.949,5	71.785,5	27.795,5	214.966,9	1.021.289,6	20
21	253.401,9	1.385.227,2	1.489,9	8.151,4	61.836,0	32.834,4	187.171,4	806.322,7	21
22	209.475,6	1.131.825,3	1.161,2	6.661,5	53.684,6	34.733,8	154.337,0	619.151,3	22
23	165.784,0	922.349,7	865,82	5.500,28	47.023,12	31.580,9	119.603,2	466.814,3	23
24	127.228,5	756.565,71	639,82	4.634,46	41.522,84	24.784,6	88.022,3	345.211,1	24

25	97.137,09	629.337,21	483,27	3.994,64	36.888,38	17.647,8	63.237,7	257.188,8	25
26	75.423,74	532.200,12	389,01	3.511,37	32.893,74	12.144,2	45.589,9	193.951,1	26
27	60.077,04	456.776,38	321,45	3.122,36	29.382,37	8.402,3	33.445,7	148.361,2	27
28	49.069,98	396.699,34	272,03	2.800,91	26.260,01	5.940,1	25.043,4	114.915,5	28
29	41.004,16	347.629,36	234,51	2.528,88	23.459,10	4.321,2	19.103,3	89.872,1	29
30	34.868,77	306.625,20	205,35	2.294,37	20.930,22	3.217,0	14.782,1	70.768,8	30
31	30.081,91	271.756,43	182,37	2.089,02	18.635,85	2.442,5	11.565,1	55.986,7	31
32	26.289,17	241.674,52	163,79	1.906,65	16.546,83	1.884,8	9.122,6	14.421,6	32
33	23.206,20	215.385,35	148,77	1.742,86	14.640,18	1.468,2	7.237,8	35.299,0	33
34	20.681,85	192.179,15	136,26	1.594,09	12.897,32	1.156,6	5.769,6	28.061,2	34
35	18.568,11	171.497,30	125,95	1.457,83	11.303,23	916,65	4.613,03	22.291,63	35
36	16.788,07	152.929,19	117,31	1.331,88	9.845,40	728,46	3.696,38	17.678,60	36
37	15.274,81	136.141,12	110,15	1.214,57	8.513,52	580,55	2.967,92	13.982,22	37
38	13.985,32	120.866,31	104,02	1.104,42	7.298,95	465,65	2.387,37	11.014,30	38
39	12.853,19	106.880,99	98,813	1.000,401	6.194,526	375,18	1.921,72	8.626,93	39
40	11.862,95	94.027,80	94,403	901,588	5.194,125	303,18	1.546,54	6.705,21	40
41	10.987,41	82.164,85	90,706	807,185	4.292,537	247,45	1.243,36	5.158,67	41
42	10.215,34	71.177,443	87,468	716,479	3.485,352	202,06	995,91	3.915,31	42
43	9.512,998	60.962,103	84,701	629,011	2.768,873	166,84	793,85	2.919,40	43
44	8.874,280	51.449,105	82,440	544,310	2.139,862	133,23	627,01	2.125,55	44
45	8.304,062	42.571,825	80,374	461,870	1.595,552	116,34	488,78	1.498,54	45
46	7.765,510	34.270,763	78,680	381,496	1.133,682	98,168	372,438	1.009,762	46
47	7.275,879	26.505,253	77,259	302,816	752,186	84,057	274,270	637,324	47
48	6.821,590	19.229,374	76,083	225,557	449,370	72,129	190,213	363,054	48
49	6.399,825	12.407,784	75,135	149,474	223,813	63,327	118,084	172,841	49
50	6.007,959	6.007,959	74,339	74,339	74,339	54,757	54,757	54,757	50

NOTE: In Table IIIa the French system of decimal notation has been retained. In that system periods are used to separate large whole numbers in sets of three figures, and a comma is used where the English system uses a decimal point.

TABLE IVa

SINGLE PREMIUM FOR AN AMOUNT OF $1,000 PAYABLE AT AGE 35 UNDER SPECIFIED CONDITIONS

Age x	Deferred Amount Payable Age 35. Basis: Life Table R. F. and 4¼% Interest	MALES		FEMALES	
		If Living and Single at Age 35	At Marriage if Before 35 Years of Age	If Living and Single at Age 35	At Marriage if Before 35 Years of Age
	$\frac{D_{35}}{D_x}$	$\frac{{}^cD_{35}}{{}^cD_x}$	$\frac{{}^mM_x - {}^mM_{35}}{{}^cD_x}$	$\frac{{}^cD_{35}}{{}^cD_x}$	$\frac{{}^mM_x - {}^mM_{35}}{{}^cD_x}$
0	173.70	22.18	230.46	18.57	281.03
5	239.50	30.59	317.87	25.61	387.61
10	303.90	38.80	403.19	32.48	491.65
15	381.80	48.75	506.55	40.81	617.68
20	484.50	62.45	639.03	63.07	714.52
25	617.10	107.19	716.21	191.15	603.53
30	784.60	399.32	449.83	532.51	291.64
35	1000.00	1000.00		1000.00	

TABLE IVb

SINGLE PREMIUM FOR AN AMOUNT OF $1,000 PAYABLE IF INSURED DIES BEFORE AGE 35

Age x	Temporary Insurance Basis: Life Table R. F. and 4¼% Interest	MALES		FEMALES	
		In Case of Death Single	In Case of Death After Marriage	In Case of Death Single	In Case of Death After Marriage
	$\frac{M_x - M_{35}}{D_x}$	$\frac{{}^cM_x - {}^cM_{35}}{{}^cD_x}$	$\frac{M_x - M_{35}}{D_x} - \frac{{}^cM_x - {}^cM_{35}}{{}^cD_x}$	$\frac{{}^cM_x - {}^cM_{35}}{{}^cD_x}$	$\frac{M_x - M_{35}}{D_x} - \frac{{}^cM_x - {}^cM_{35}}{{}^cD_x}$
0	166.56	154.99	11.57	148.44	18.12
5	91.96	77.00	15.96	67.96	25.00
10	83.84	63.60	20.24	52.13	31.71
15	82.89	57.46	25.43	43.05	39.84
20	71.26	39.44	31.82	28.84	43.42
25	52.49	21.74	30.75	26.12	26.37
30	30.59	20.03	10.56	23.99	6.60

TABLE V

TABLE OF REPRODUCTIVE RATES μ_x

Father's Age	Males	Mother's Age	Females
15 years		15 years	0.4092
16 —		16 —	0.3061
17 —		17 —	0.2731
18 —	0.4471	18 —	0.2633
19 —	0.3292	19 —	0.2641
20 —	0.2932	20 —	0.2690
21 —	0.2843	21 —	0.2736
22 —	0.2872	22 —	0.2746
23 —	0.2946	23 —	0.2700
24 —	0.3013	24 —	0.2595
25 —	0.3031	25 —	0.2445
26 —	0.2977	26 —	0.2270
27 —	0.2855	27 —	0.2088
28 —	0.2677	28 —	0.1916
29 —	0.2472	29 —	0.1759
30 —	0.2263	30 —	0.1620
31 —	0.2065	31 —	0.1498
32 —	0.1885	32 —	0.1389
33 —	0.1727	33 —	0.1289
34 —	0.1588	34 —	0.1192
35 —	0.1464	35 —	0.1095
36 —	0.1353	36 —	0.0993
37 —	0.1250	37 —	0.0886
38 —	0.1151	38 —	0.0774
39 —	0.1055	39 —	0.0661
40 —	0.0958	40 —	0.0554
41 —	0.0861	41 —	0.0455
42 —	0.0765	42 —	0.0368
43 —	0.0672	43 —	0.0249
44 —	0.0584	44 —	0.0164
45 —	0.0503	45 —	0.0107
46 —	0.0430	46 —	0.0071
47 —	0.0365	47 —	0.0048
48 —	0.0306	48 —	0.0033
49 —	0.0263	49 —	0.0023
50 —	0.0223	50 —	0.0017

TABLE Va

BIRTH INSURANCE

COMMUTATION TABLE

MALES 4.25%

X	$V_x - W_x$	$H_x = V_x - W_x + \frac{m_x}{4}$	$n_x = H_x \mu_x$	E_x	U_x
	1	2	3	4	5
18 years....	0	564	252	116.7	514,957.9
19 —.....	2,240	3,626	1,194	530.3	514,841.2
20 —.....	7,665	10,992	3,223	1,373.1	514,310.9
21 —.....	20,871	27,192	7,731	3,159.4	512,937.8
22 —.....	45,842	55,947	16,068	6,298.7	509,778.4
23 —.....	85,651	99,398	29,283	11,011.0	503,479.7
24 —.....	139,696	157,874	47,567	17,157.0	492,468.7
25 —.....	210,989	233,264	70,702	24,462.0	475,311.7
26 —.....	298,277	322,140	95,901	31,827.9	450,849.7
27 —.....	391,289	412,609	117,800	37,501.9	419,021.8
28 —.....	473,543	489,943	131,158	40,052.3	381,519.9
29 —.....	535,656	547,211	135,271	39,624.2	341,467.6
30 —.....	578,066	586,087	132,631	37,267.1	301,843.4
31 —.....	606,116	611,812	126,339	34,051.9	264,576.3
32 —.....	624,639	628,820	118,533	30,645.5	230,524.4
33 —.....	636,910	640,085	110,543	27,414.7	199,878.9
34 —.....	645,069	647,547	102,830	21,462.2	172,464.2
35 —.....	650,307	652,283	95,494	21,790.9	148,002.0
36 —.....	653,408	655,011	88,623	19,398.6	126,211.1
37 —.....	654,920	656,236	82,030	17,223.5	106,812.5
38 —.....	655,155	656,249	75,534	15,213.0	89,589.0
39 —.....	654,342	655,244	69,128	13,355.2	74,376.0
40 —.....	652,634	653,386	62,594	11,599.8	61,020.8
41 —.....	650,105	650,734	56,028	9,959.8	49,421.0
42 —.....	647,038	647,563	49,539	8,447.2	39,461.2
43 —.....	643,360	643,800	43,263	7,076.3	31,014.0
44 —.....	639,133	639,504	37,347	5,859.6	23,937.7
45 —.....	634,419	634,732	31,927	4,805.0	18,078.1
46 —.....	629,342	629,609	27,073	3,908.4	13,273.1
47 —.....	623,754	623,982	22,775	3,153.9	9,364.7
48 —.....	617,841	618,037	18,912	2,512.2	6,210.8
49 —.....	611,519	611,689	16,087	2,049.8	3,698.6
50 —.....	604,768	604,916	13,490	1,648.8	1,648.8

TABLE Va

BIRTH INSURANCE

COMMUTATION TABLE

FEMALES 4.25%

X	$V_x - W_x$	$H_x = V_x - W_x + \frac{m_x}{4}$	$n_x = H_x \mu_x$	E_x	U_x
	1	2	3	4	5
15 years....	0	3,801	1,555	815.7	598,717.7
16 —.....	15,127	20,211	6,187	3,113.3	597,902.0
17 —.....	35,293	42,136	11,507	5,554.3	594,788.7
18 —.....	62,221	71,477	18,820	8,713.9	589,234.4
19 —.....	98,576	111,025	29,322	13,023.0	580,520.5
20 —.....	147,360	163,671	44,027	18,756.8	567,497.5
21 —.....	211,166	231,253	63,271	25,856.5	548,740.7
22 —.....	289,441	311,593	85,563	33,540.9	522,884.2
23 —.....	375,462	396,459	107,044	40,250.8	489,343.3
24 —.....	456,456	473,635	122,908	44,331.9	449,092.5
25 —.....	521,815	534,567	130,702	45,221.3	404,760.6
26 —.....	569,237	578,385	131,293	43,573.9	359,539.3
27 —.....	602,001	608,599	127,075	40,454.6	315,965.4
28 —.....	624,432	629,295	120,573	36,819.9	275,510.8
29 —.....	639,665	643,353	113,166	33,149.1	238,690.9
30 —.....	650,141	653,003	105,786	29,724.1	205,541.8
31 —.....	657,245	659,511	98,795	26,628.0	175,817.7
32 —.....	661,794	663,617	92,176	23,831.2	149,189.7
33 —.....	664,510	665,992	85,846	21,289.8	125,358.5
34 —.....	665,718	666,934	79,499	18,912.0	104,068.7
35 —.....	665,813	666,817	73,016	16,661.6	85,156.7
36 —.....	664,953	665,785	66,112	14,471.2	68,495.1
37 —.....	663,294	663,985	58,829	12,352.1	54,023.9
38 —.....	660,914	661,492	51,199	10,311.8	41,671.8
39 —.....	658,031	658,517	43,528	8,409.4	31,360.0
40 —.....	654,643	655,052	36,290	6,725.2	22,950.6
41 —.....	650,816	651,164	29,628	5,266.8	16,225.4
42 —.....	646,545	646,841	23,804	4,059.0	10,958.6
43 —.....	641,963	642,218	15,991	2,615.6	6,899.6
44 —.....	637,056	637,276	10,451	1,639.7	4,284.0
45 —.....	631,744	631,937	6,762	1,017.7	2,644.3
46 —.....	626,219	626,389	4,447	642.0	1,626.6
47 —.....	620,328	620,480	2,978	412.4	984.6
48 —.....	614,121	614,257	2,027	269.3	572.2
49 —.....	607,578	607,702	1,398	178.1	302.9
50 —.....	600,680	600,792	1,021	124.8	124.8

TABLE Vb

Birth Insurance

Complementary Commutation Table

Age at Entry x	MALES		FEMALES	
	$\mu_x D_x$	$\mu_x N_x$	$\mu_x D_x$	$\mu_x N_x$
15		1.498.308 30	186.178 90	1.583.539 30
16		1.498.308 30	132.904 20	1.397.360 40
17		1.498.308 30	113.099 80	1.264.456 20
18	176.527 40	1.498.308 30	103.958 10	1.151,356 40
19	123.870 60	1.321.780 90	99.374 91	1.047.398 26
20	105.112 30	1.197.910 30	96.436 61	948.023 35
21	97.091 86	1.092.798 00	93.437 68	851.586 74
22	93.432 82	995.706 17	89.333 75	758.149 06
23	91.306 67	902.273 35	83.682 29	668.815 31
24	88.983 17	810.966 68	76.638 34	585.133 02
25	85.315 13	721.983 51	68.820 69	508.494 68
26	79.877 82	636.668 38	60.907 85	439.673 99
27	73.018 31	556.790 56	53.401 83	378.766 14
28	65.255 97	483.772 24	46.705 43	325.364 31
29	57.429 03	418.516 28	40.864 75	278.658 88
30	50.100 29	361.087 25	35.864 99	237.794 13
31	43.561 82	310.986 96	31.600 77	201.929 14
32	37.886 16	267.425 14	27.917 18	170.328 37
33	33.066 90	229.538 98	24.680 51	142.411 19
34	28.961 90	196.472 08	21.739 66	117.730 68
35	25.429 09	167.510 18	19.019 71	95.991 02
36	22.378 57	142.081 09	16.424 18	76.971 31
37	19.684 03	119.702 52	13.952 04	60.547 13
38	17.253 05	100.018 49	11.601 97	46,595 09
39	15.050 06	82.765 44	9.429 469	34.993 1203
40	13.003 10	67.715 38	7.519 536	25.563 6513
41	11.116 53	54.712 28	5.874 587	18.044 1153
42	9.392 708	43.595 75	4.518 322	12.169 5283
43	7.843 839	34.203 04	2.906 423	7.651 2063
44	6.478 219	26.359 21	1.819 226	4.744 7833
45	5.300 664	19.880 98	1.127 577	2.925 5573
46	4.303 053	14.580 32	710 5041	1.797 9803
47	3.466 965	10.277 27	455 9297	1.087 4762
48	2.757 473	6.810 300	297 3745	631 5465
49	2.242 202	4.052 827	196 5234	334 1720
50	1.805 625	1.805 625	137 6486	137 6486

Note: In Table Vb the French notation is employed, whole numbers being separated in sets of three figures by means of a period, and the position of the decimal point indicated by the blank space.

ABSTRACT OF THE DISCUSSION OF PAPERS READ AT THE PREVIOUS MEETING

PROCEDURE IN THE EXAMINATION OF CASUALTY COMPANIES — EMMA C. MAYCRINK VOLUME XVIII, PAGE 81

WRITTEN DISCUSSION

MR. HARTWELL L. HALL:

Miss Maycrink has dealt with her topic both ably and completely and my comments, therefore, consist only of supplementary remarks and observations. Near the beginning of this paper, she spoke of the anomaly presented in the blank wherein casualty companies show the premiums as written and the disbursements and other income on a cash basis. When and if casualty companies adopt a cash basis of premium reporting, losses due to the evil of free insurance and other factors would be minimized. A much clearer financial statement would result from cash reporting and there would appear to be some reduction in expenses due to the simplification of records.

While the examiner does not need to be suspicious of the various entries he finds, yet he should at all times maintain a critical attitude in all his work. In a broad sense, the examination consists of inventorying and valuation. The assets should not be overvalued and the liabilities should not be undervalued. In Connecticut, we allow the amortization of bonds for fire and casualty companies as in life companies. Values are not very difficult to obtain for practically all assets except the heterogeneous ones which are found under the title, "expected recoveries on depository losses," "advances on contracts," "salvage recoverable," etc. These are found in the reports of some companies doing fidelity and surety business. Due to the fact that letters which give conservative estimates may be obtained from the Treasury Department in regard to expected recoveries on national banks and from receivers on other banks, the first mentioned account, "expected recoveries on depository losses," probably has considerable merit. Most of the other types of salvage assets are both slow moving and indeterminate and, because of

these and other facts, our department would much prefer to see such items relegated to Schedule X. A company which takes any sizeable credit for such items incurs the suspicion that it was necessary to do so in order to make a favorable statement.

Turning to the liabilities, the loss reserve is the most important account. We find that we follow the methods mentioned in this paper quite closely. As stated, our review follows some time after the date of the statement and considerable accuracy can be obtained, especially in certain lines where the run-off is of short duration. We use the company's Hollerith cards to obtain the listing as of the date of the statement. Then we follow this by a run-off of the paid cards on these cases and also the incurred but unreported cases up to the time of the examination. A list of the claims still open is then made with the latest estimate available. Such cases in a large company should be test checked with the claim files, the best source of available information. In smaller companies or in cases of special examinations, all the files may be reviewed. For example, in a company which was examined as of December 31, 1928, the paid cards for the first six months of 1929 were available on the accident and health lines and were sorted into three groups:

1. The disability date 1928 or prior, notice received in 1928.
2. The disability date 1928 or prior, notice received in 1929.
3. The disability date 1929, notice received in 1929.

The total for the first group furnished the paid data for the "adjusted or in process" column. The second group furnished the "incurred but not reported" paid data. The third group material is only used in order that the grand total of all the groups may be checked with the disbursement accounts for these lines. Then, of course, the estimates of the still outstanding cases are added to the figures obtained. The reserves for cases payable throughout life were based on tabular reserves. This statement is given merely to show what results may be accomplished by the use of the Hollerith cards. This method could be used for all lines where the losses are soon known. The fidelity and surety claims have to be established from the information in the files.

In all the other lines where a large part of the liability is deferred, the company's reserves must be test checked quite

thoroughly. It is necessary to review a large number of claim files. In order to be satisfied with the company's reserves, it may be necessary to check up a list six months or one year old and find out what has been the run-off on these cases, together with the latest reserve on the cases still open. A schedule on this basis for a five-year period similar to Schedule G has been recommended by the Report of Committee on Compensation and Liability Loss Reserves of this Society.

In checking the unearned premium reserve, care should be taken to see that all portfolio insurance accepted is carried at the reserve which would have been carried by the original company had it retained the risks. Otherwise, a company which puts up only 50 per cent. of its premiums as a reserve could add a substantial amount to surplus unjustifiably by taking over a portfolio of insurance at the year-end.

An outline of procedure followed in examination of insurance companies was included in a paper entitled "Examination of Insurance Companies" presented before the National Convention of Insurance Commissioners by Howard P. Dunham, Insurance Commissioner of Connecticut, at the September, 1931, meeting of that organization. With slight changes, this procedure was adopted by the National Convention of Insurance Commissioners and can be found in the *Proceedings* of that body.

MR. WILLIAM M. CORCORAN:

Miss Maycrink has treated this subject so accurately and completely that little further discussion seems to be necessary. The author states, however, that other features in the examination of insurance companies might be enumerated indefinitely and I have jotted down for discussion a few minor points that often arise in connection with insurance department examinations.

In the examination of some companies, the cash in office item, as reported in the company's statement, cannot be verified by an actual count of the cash on the date following that which is to be the date of the examination report. The reason for this is that many companies now keep their books open several days beyond the date of the statement and enter the cash received for overdue premiums during this period as of the last date of

the accounting period. These late remittances must, of course, be shown as cash in office in the statement. I believe it is now the practice of several insurance departments to permit these items to be treated as cash in office if the company retains evidence to show that remittances were actually mailed prior to the end of the statement period.

The insurance departments quite naturally prefer to have companies take no credit for salvage items until they have been converted into cash. At the present time, however, salvage items of many companies total such a substantial amount that the companies quite naturally and quite reasonably desire to obtain credit for these items before they are converted into cash. I think that most insurance departments now allow companies to carry salvage assets at values which can be clearly substantiated. Due to the antipathy of many departments toward the title "salvage assets," these items are often distributed in the assets as "real estate," "mortgage loans," "bonds" and "stocks" and, in the case of advances, many times as "collateral loans." The examiners should carefully investigate the value of all assets received as salvage. One important point is to make sure that the company takes credit only for its net equity in any salvage and does not include any equities which belong to reinsurers. It is very easy for a company to take credit for gross salvage on a loss which is reinsured, for the reason that in many companies a separate salvage department is maintained which concerns itself purely with the collection of salvage and only to a slight extent with reinsurance arrangements, these being handled usually by the accounting or claim department. Sometimes the company secures its salvage estimates from the salvage department and neglects to give proper consideration to reinsurance. This is particularly important in the case of losses which have resulted in the payment of reinsurance under excess treaties. In such cases, the reinsurer is usually entitled to all salvage until its loss has been completely repaid.

The liability for unpaid commissions is usually estimated by applying the ratios developed from the company's experience to the outstanding premiums under 90 days due. Some companies now have excess reinsurance treaties providing for the payment of a flat premium with no commission. If outstanding reinsur-

ance premiums due have been deducted from the outstanding premiums, this fact should be taken into consideration in estimating the commission liability.

Miss Maycrink states that the majority of examinations are as of the last day of the year. This has quite generally been true in the past, inasmuch as a considerable lapse of time between the date of the examination and the actual work of the examination has given the examiners the benefit of a large amount of subsequent experience in estimating the loss reserve. At the present time, however, most departments feel that it is most important to make the examination date just as short a period as possible before the work is actually begun; in other words, to bring the examination up to the latest date possible. The accounting and statistical facilities of most of the companies at the present time make it possible for an examiner to make up his statement as of almost any date in the year with equal facility.

MR. JOHN EDWARDS:

Miss Maycrink's paper is very well written and clearly shows the present-day tendency of insurance departments generally to cooperate with the companies in the dissemination of knowledge.

The procedure in Canada regarding the examination of licensed insurers is largely the same except for the differences in the construction of the annual statement blanks and the various laws affecting such insurers.

Insurance supervision is a much older institution in the United States than it is in Canada, although a number of companies were separately incorporated before supervision was considered. The Halifax Fire Insurance Company was originally organized in 1809 and the British America Assurance Company was incorporated by an Act of Legislature of the Province of Upper Canada February 13, 1833, and commenced business the same year.

At the twelfth Parliament of Upper Canada in the 6th year of William IV an Act was passed April 20, 1836 entitled "An Act to authorize the establishment of Mutual Insurance Companies in the several Districts of this Province." This Act is quoted in part as follows:

> "Whereas divers loyal subjects of His Majesty being inhabitants of this Province, have by their petition repre-

> sented the great advantages that would arise from the introduction into this Province of the principle of Mutual Insurance against losses by fire, and have prayed the interference of the Legislature to enable them to bring the said principle into effective operation: And whereas it hath been made apparent that the said representation is well founded, and it is expedient that the prayer of the petitioners be granted: Be it therefore enacted by the King's most Excellent Majesty, by and with the advice and consent of the Legislative Council and Assembly of the Province of Upper Canada, constituted and assembled by virtue of and under the authority of an Act passed in the Parliament of Great Britain, entitled, 'An Act to repeal certain parts of an Act passed in the fourteenth year of His Majesty's reign entitled, "An Act for making more effectual provision for the Government of the Province of Quebec, in North America," and to make further provision for the Government of the said Province,' and by the authority of the same, That it shall and may be lawful at any time for any ten freeholders in any district in this Province to call a meeting of the freeholders of such District, for the purpose of considering whether it be expedient to establish in such District a Fire Insurance Company on the principle of Mutual Insurance."

The British North America Act, 1867, provided for the union of the provinces of Canada, Nova Scotia and New Brunswick. Provision was made in this Act for the distribution of legislative powers as between the Parliament of Canada and the Provincial legislatures. In 1868, the first Parliament of Canada passed an Act respecting insurance companies which provided, among other things, that no insurance company other than a purely provincial company, could carry on business in Canada without receiving a license from the Minister of Finance unless transacting exclusively ocean marine insurance. The issue of the license was contingent upon the filing of a deposit. The Dominion Government did not have any specific legislative authority at the time the Act of 1868 was passed relative to the licensing of companies. The attempt by the Dominion Government to regulate the business of insurance (other than purely Provincial companies), has been a subject of controversy for many years. As recent as 1931 —the Privy Council referred to the "domination" and "intermeddling" of the Dominion in insurance matters and concluded that:

> "A Dominion license, so far as authorizing transactions of insurance business in a province is concerned, is an idle piece of paper conferring no rights which the party transacting in accordance with provincial legislation has not already got, if he has complied with provincial requirements."

This observation was made in relation to the British and foreign companies.

In 1875 Ontario passed a law of general application prescribing what conditions should be included in fire insurance policies. A Canadian company with federal charter and a British company, both licensed under the Dominion Insurance Act, challenged the validity of the legislation on constitutional grounds. Thus was decided the leading case of Citizens Insurance Company vs. Parsons (1881) 7 A. C. 96, wherein their Lordships of the Judicial Committee of the Privy Council, in England, our court of last appeal on constitutional questions, held that the exclusive jurisdiction of the provinces with respect to "property and civil rights" included rights arising from contract, and that the exclusive jurisdiction of the Dominion with respect to the "regulation of trade and commerce" did not include the regulation of the contract of a particular business or trade such as the business of fire insurance.

In 1877, Ontario passed an Act respecting insurance companies, and in 1879, an Act to provide for the inspection of insurance companies was passed which provided in part:

> "For the efficient administration of the Insurance business in the Province of Ontario, the Lieutenant-Governor in Council may appoint an officer to be called the Inspector of Insurance, who shall act under the instructions of the Treasurer of Ontario, and his duty shall be to examine and report to the said Treasurer from time to time upon all matters connected with insurance as carried on by the Companies subject to the legislative authority of this Province doing the business of Insurance in Ontario, or required by the said Acts or by this Act to make returns of their affairs."

Looking backward it is hard to realize the extent to which insurance supervision has grown in the short space of less than sixty years in Ontario. At present there are upwards of 300 joint stock insurance companies licensed in the Province, not to mention the number of mutual insurance corporations, fraternal societies, mutual benefit societies, reciprocals and pension fund societies.

Annual statement blanks for fire and casualty stock companies in Canada are compiled on a strictly revenue basis, that is, assets and liabilities, profit and loss, with the analysis of surplus. Companies are permitted to show the unearned premium reserve in the liabilities at 80 per cent. This means that acquisition cost which is usually incurred at the time premiums are written, is taken into consideration in setting up the unearned premium reserve to the extent of 20 per cent. allowance. The details concerning premiums, claims, reserves, etc., by class of insurance are contained in separate schedules. Companies in Canada are not required to file the so-called "Casualty Experience Exhibit" which is necessary in New York State.

The extent to which insurers have included railroad bonds in their investment portfolio may cause some concern. It is generally admitted that the decline in railroad business is due to causes other than just the present depression. In all probability steps will be taken by the railroads in the future to be allowed to work out some system of consolidation and there will be more effective regulation of motor transportation.

Stock insurance companies incorporated in Ontario in making the annual return to the department are required to have the statement certified by the auditors in addition to the usual verification of the officers of the company. This certificate of the auditors reads:

> "We undersigned, the Auditors of the Company, Hereby Certify that we have carefully examined the within Statement and compared the entries therein with the books and records of the Company and that the said entries are correct. We further certify that:
>
> (a) we have audited the books of the company and have verified the cash, bank balances and securities;
>
> (b) we have checked the reserve of unearned premiums and that it is calculated as required by the Insurance Act;
>
> (c) we have examined the reserve for unpaid claims and that in our opinion it is adequate;
>
> (d) that the balance sheet does not show as assets unpaid balances owing by agents or other insurers whose accounts have not been verified within the next preceding ninety days;

(e) the balance sheet does not include as assets, items prohibited by the Insurance Act from being shown in the Annual Statements required to be filed thereunder;

(f) after due consideration, we have formed an independent opinion as to the position of the company and that, with our independent opinion so formed, and according to the best of our information and the explanations given us, we certify that in our opinion, the balance sheet sets forth fairly and truly the state of affairs of the company; and that

(g) all transactions of the company that have come within our notice have been within its powers."

If a company is examined as of the date of the last annual statement, I believe that agents' balances and outstanding premiums which were outstanding more than ninety days and therefore non-admitted at the end of the previous year, should be allowed as admitted assets by insurance department examiners if on examination, or at the time of the examination, it is found that such overdue premiums or balances had actually been collected in cash. Others will disagree with me on this point. If, for example, claim reserves are (say six months after the close of the year) found on inspection to be insufficient, the examiner will have no hesitation in adjusting the reserve set up by the company. Similarly then, I believe non-admitted assets subsequently realized should receive the same consideration.

One might question the wisdom of companies in the past having been allowed to value their securities owned above book value, where at the annual statement date the investments at market value were in excess of the amortized value of bonds or, in excess of cost in the case of stocks owned. If this practice or method of valuation of bonds on the amortized basis and stocks at cost had been followed a number of companies would not have been so badly hit in the present depression. Unfortunately, laws governing insurance investments have not kept pace with changing economic conditions.

In connection with the use of Hollerith cards for the computation of the premiums in force, it is important for the examiner to make a test check of the individual punch cards in order to see if proper attention or care is exercised in the matter of the expiry year or policy term. If, in the case of large schedule poli-

cies, the wrong expiry year is punched on the cards it would be possible for errors to creep into the unearned premium reserve.

The verification of "provision for unpaid and unreported claims" in Canada is not as laborious as it is in the United States, since in Canada almost all of workmen's compensation is compulsory monopolistic state fund. Claims for other lines do not drag on so long and it is rare to find claims outstanding more than two years old.

Miss Maycrink has written a valuable paper for the Society and very little can be added to it. I notice in the last paragraph of the paper reference to the efforts which are being made towards standardization and uniformity in the insurance accounting and statistical record keeping. So long as companies differ in method of operation in the field it will be difficult to have uniformity in record keeping but the problem, while difficult, is not incapable of or beyond our solution.

A METHOD OF ASSEMBLING AND ANALYZING THE DATA REPORTED UNDER THE UNIT STATISTICAL PLAN — MARK KORMES

VOLUME XVIII, PAGE 99

WRITTEN DISCUSSION

MR. ROY A. WHEELER:

When reviewing this paper in which Mr. Kormes described the procedure of the New York Rating Board in handling the unit report system, one might recall Mr. Magoun's discussion of the procedure which the Massachusetts Rating Bureau uses in handling the Massachusetts unit report system.

It is noticeable that the first step in either procedure is to establish a control by carrier for each month of reporting. In both cases the reports as received are verified and the verified or corrected totals are entered on the carrier control card.

In both cases a punch card is produced for each risk. Other

punch cards are produced for the premiums of that risk and still others for the losses. Each card contains about the same information under either plan.

The Massachusetts procedure differs from that of New York by maintaining a second control by class. When all carriers have sent in their unit reports for a particular month of reporting and the punch cards from these reports have been proved to the carrier controls, these cards are then sorted into a class sequence regardless of carrier and tabulated to produce the information called for on Schedule Z. The totals are then entered into this second or class control and cumulated with what has been entered previously. In effect, this results in a gradual building up of Schedule Z during the year. From it, it will be possible to obtain advance information for a particular class or of all classes combined. Further, it will permit comparisons with like periods in other years either cumulatively or month by month. Such a record should be a valuable source of information for research and rate making. The overall control of the classes should agree with the overall control of the carriers.

Besides this class control, another difference in the two procedures is the method of producing Schedule Z. In the New York procedure any work on Schedule Z compilation is done without regard to carrier. In the Massachusetts procedure, however, the punch cards are sorted into classes and then each class is broken down into carrier. The cards so sorted are tabulated, producing carrier class totals which are at the same time accumulated into a state-wide class total. Furthermore, the results are recorded in triplicate by the tabulator on a form which becomes the filing form of Schedule Z, Massachusetts still requiring each carrier to submit its Schedule Z. Under this procedure, at a single run of cards, the Bureau produces a state-wide Schedule Z and a carrier Schedule Z, thus eliminating the duplicate effort which would otherwise exist between Bureau and carrier.

The class total as produced is checked with the class control while the total of all classes for a carrier should check to the carrier control. This double check produces a feeling of confidence in the reliability of the answers.

These two items would seem to differentiate the two procedures and yet they are purely operating differences. In both New York

and Massachusetts the carriers are asked for the same information and the punch cards of the two procedures show the same items of information with one or two minor exceptions. In other words, there is nothing to prevent either procedure operating as is the other.

Aside from the fact that Massachusetts still requires a Schedule Z filing of each carrier, the Massachusetts procedure is of value in more clearly showing discrepancies and chasing down errors. This control in the New York procedure is missing because its procedure produces master cards on risks, premiums and losses, thus losing carrier identity, and then uses these master cards for producing both Schedule Z and statistical information, whereas, the Massachusetts procedure uses the premium and loss cards for producing Schedule Z and depends upon the risk cards for the statistical information which may be wanted. If, for instance, a special study is required of a class or of an industry schedule class, from the risk cards, the risks contained in the class are listed and the unit reports themselves are taken from file and studied.

One interesting feature in Massachusetts which is of material benefit to the Insurance Department is that all awards, agreements, discontinuances, etc., are filed with the Industrial Commission in duplicate and one copy goes to the Bureau for its files. Furthermore, the Department maintains office space in the same building that houses the Bureau and the Department representatives stationed there check over with the records the special case reports, etc., as they are received by the Bureau with the unit reports, thus establishing their accuracy. Furthermore, as each month's figures are tabulated for the class control, they are audited by the Department representatives. As a result, when Schedule Z is finally prepared, it is ready for immediate acceptance by the Department, thus eliminating several weeks' delay which formerly existed.

MR. R. M. MARSHALL:

Mr. Kormes' paper on the unit statistical plan presents a discussion of a comparatively recent development of workmen's compensation insurance statistics and will be welcomed by all

interested in the subject. Mr. Graham's paper in the May, 1931, *Proceedings* gave us an insight into the method of preparing and submitting the data for the unit plan employed by a carrier, and now Mr. Kormes has carried the subject to a logical conclusion by describing a method of handling these data in a central organization.

Mr. Kormes' paper traces the progress of the data as submitted by the carriers through the various steps of auditing and recording and indicates difficulties that have been encountered at various stages. The paper is developed in a clear and logical manner and sufficient detail has been given to enable the reader to follow the process easily and to appreciate the tremendous amount of painstaking labor required. The paper also brings out very clearly the necessity of careful accuracy and uniformity in submitting the data.

The paper should be of value, not only to students and those company men dealing with this subject, but also to other central organizations who have charge of compiling the data submitted by carriers under the unit statistical plan. A comparison of forms and procedure employed by the different organizations will undoubtedly yield many valuable suggestions for changes and improvements.

The remainder of this discussion is presented for the purpose of bringing out differences between the procedure of the New York Board as outlined in Mr. Kormes' paper, and the National Council procedure. The experience of the National Council so far has been rather limited, as up to the present time it has dealt only with unit reports for the states of North Carolina and Georgia.

The first point that strikes one upon comparing the New York Board procedure with the procedure for other jurisdictions is the vast number of reports which the New York Board is compelled to handle. The volume of compensation insurance in the state of New York is so large that it practically places the state in a class by itself; and makes it necessary to adopt extra checks and controls which are not required in states with a smaller volume of business. For example, the Council has not found it necessary to punch "risk cards" or "master cards" for Georgia or North Carolina.

The New York requirements for reporting under the unit statistical plan are practically identical with the requirements in other jurisdictions and the preliminary audits of the data submitted follow essentially the same procedure. In the National Council the audit does not stop with the preliminary audit as described by Mr. Kormes but is carried through to completion. The additional process consists of an examination of the individual accident reports to determine if the occupation and cause of the injury are consistent with the classification to which the case has been assigned. The individual reports are also examined to see if the award is in accordance with the compensation law and if the injury has been assigned to the correct "kind of injury" division. This check is made for every risk submission. The majority of errors in incorrect assignment of classification are encountered in assignment of accidents to the governing classifications where they should be assigned to a subsidiary classification. This is particularly true of the standard exceptions. The "conditions affecting coverage" and "endorsements" are also examined to determine if the payrolls are split as required, and losses are examined to see that catastrophes are properly indicated. Mr. Kormes indicates that some of the reports are subject to final audit where the necessity for the same is indicated but he does not describe the details of this final audit. An audit of every risk along the lines outlined above would seem to be desirable.

There also seems to be some difference in the order of procedure. The New York Board apparently delays the final audit until after the exposure and loss cards have been coded and punched; while the audit is completed in the National Council before punching. In the Council the auditing and coding functions are combined in the same department. By first completing the audit, it is possible in many instances to correct errors before communicating with the reporting carrier.

Mr. Kormes' description of the new expiration record procedure of preparing punch cards to show policy number, carrier, Board file number, and date of issue is interesting and probably necessary where there are such a large number of risks. With a considerably smaller number of risks no difficulty is encountered in filing the reports of coverage, endorsements, and cancellation

cards alphabetically by expiration date. Then, when the experience card is received, the coverage cards are "pulled" and attached to the proper experience cards, and sent up for audit. In this manner the audit department has sufficient data to make a complete audit including the checking of required payroll splits.

The major difference between the New York Board and National Council procedure, however, lies in the punching of data. The Board has designed one card for recording either exposure or losses, the nature of the transaction being indicated by the punching of a "transaction" column. The Council employs a 45 column card and has designed one card for exposure and a different card for losses. Off-hand, this seems like a desirable precaution, as an error in punching the transaction incorrectly on a "universal" card might lead to considerable trouble.

In the Council's punch cards the first 20 columns on both cards are identical and are used for identification of the risk.

These columns show:

1. Month and year of issue
2. Term in months
3. Card serial number
4. Carrier code
5. State
6. Premium size
7. Governing classification
8. Type rating
9. Coverage

As previously stated, these columns are identical on the "exposure and premium" card and on the "loss" card.

The "exposure and premium" card also shows for each classification included in the risk

10. Classification code
11. Counter
12. Audited payroll
13. Audited premium
14. Experience modification
15. Schedule modification

For each risk a number of "exposure-premium" cards are punched—one for each classification reported in the risk. The

identifying information punched in the first twenty columns is identical on each card and the classification indicated in these columns is the governing classification of the risk. The remaining 25 columns are devoted to recording the exposure under each classification involved in the risk. The counter column is punched "1" on the card giving the exposure under the governing classification, and is punched "0" on each of the other cards giving the exposure under subsidiary classifications. In this manner there are a number of punch cards for each risk, only one of which, however,—the one giving the exposure for the governing classification—is punched "1" in the counter column. A run of the cards will therefore count the number of risks, and it is not necessary to punch a separate "risk" card. With the same volume as in New York, however, it would probably be desirable and even necessary to have one card to show total risk payroll, premium and losses.

There is a certain advantage in having the risk governing classification and the experience individual classification punched upon the same card. When this is done, it is a simple matter to conduct investigations regarding the relationship between the exposure under the governing class and under the other subsidiary classifications, and to determine the necessary rate adjustments if the scope of coverage provided by the governing classification is to be changed.

In regard to the type of coverage; in addition to indicating ex-medical coverage, the instructions provide for the carrier's indicating partial ex-medical coverage where the assured maintains his own hospital without reimbursement by the insurance carrier. It is noted from Mr. Graham's paper that the State Fund provides for indicating "partial ex-medical" on the punch cards which they prepare for their own use. If this system could be extended by the Board to cover all carriers, it would undoubtedly yield some interesting and valuable information.

Mr. Kormes has already commented upon the desirability of punching the actual merit modification for each risk.

Returning again to Council procedure, a separate "loss card" is punched for each claim. The first 20 columns of this card show the nine risk identifying items previously outlined and are identical for each card recording losses under the one risk. The

remaining 25 columns are devoted to recording the loss experience of each claim, and show:

10. Carrier's claim number
11. Month and year of accident
12. Classification to which the loss is assigned
13. Kind of injury
14. Compensation incurred cost
15. Corresponding medical cost
16. Claim counter

The card indicates whether the case is "open" or "closed," and facilities are also provided to show whether a catastrophe is involved and also whether losses are paid under the United States Longshoremen's Act.

A comparison of the information punched regarding losses indicates that the main difference between the two systems is that the loss card used by the National Council has been arranged so that both the indemnity loss and the corresponding medical loss are punched upon the same card. This reduces the number of cards which have to be punched, and at the same time permits a separation of medical into "compensable and non-compensable" medical and also allows an analysis of medical cost by kind of injury for any actuarial studies that may be desired along this line.

At the present time the unit statistical cards have been used mainly for Schedule Z purposes, so perhaps any prophecies regarding the adequacy of either system for other investigation are premature. Undoubtedly time and experience will suggest changes and improvements. Already circumstances have arisen that would make welcome some method of identifying occupational disease losses on the punch cards.

MR. CHARLES M. GRAHAM:

In discussing the comprehensive description of the office procedure of the Compensation Insurance Rating Board set forth in Mr. Kormes' paper, I shall follow the order in which he outlines the various steps.

The Recording Division or Index

The operation of the alphabetical index described has not been fully satisfactory. Numerous requests from the Board have been received in this office, requesting that the name and address shown on the experience report be investigated as to their accuracy, because of the fact that the Board had no record of the risk. In the majority of cases, the investigation disclosed that there had been a change of name and/or interest on the risk between the time that the original declaration had been filed, and the date that the experience report was prepared. An endorsement showing the change had been filed with the Board, but had not been entered by the Recording Division. As the experience card was prepared on the corrected basis, it naturally differed from the original declaration, but would have checked out exactly had the transfer of interest endorsement been properly recorded. It is recognized, however, that the tremendous volume of work involved in the handling of thousands of endorsements, has handicapped this division of the Board to an extent which should excuse a considerable number of routine errors. It is rather unfair, however, to charge all of the errors to the carriers, as it is known that the Board has erred in some cases.

The Expiration Record

This record seems somewhat unsatisfactory at the present time, because of the possibility of an error on the part of the Recording Division in assigning the Board file number. Such an error might cause two expiration cards to be prepared for a single risk, especially in cases where a change of name and/or interest has not been properly recorded. However, the Hollerith card Expiration Record described by Mr. Kormes in the latter portion of his paper which is effective on policy year 1932, seems to solve the question very satisfactorily. It eliminates the necessity of assigning Board file numbers to the experience cards from the alphabetical index, substituting therefor a numerical index, which, in the opinion of the writer, will eliminate most, if not all, of the difficulties heretofore encountered in matching the policy declarations with the experience cards.

The Filing Division

It has been brought out by the Board's request for a duplicate

set of individual reports (see Statistical Circular No. 26 dated April 26, 1932) that the original reports are filed in the individual risk statistical folder. The explanation has been offered that these individual reports are needed by the Rating Division and so are not available for filing elsewhere by classification. The duplicate set of reports is to be filed by classification. The writer does not see the necessity of keeping the original individual report in the statistical folder, as the Rating Division has all the necessary information on the experience card itself, except possibly in those few cases where recoveries from third parties necessitate a modification in the death and permanent total average value. As the carriers are required to report the net incurred loss on the experience card, small incurred losses on death and permanent total cases could be easily questioned by the Rating Division, and individual reports, even if filed in order by classification, should be readily available for exact information on the few claims which it would be necessary to investigate. In this way, the extra cost of a duplicate set of individual reports could be avoided.

Statistical Routine-Preliminary Audit

There appears to be much routine checking and auditing done by the Statistical Division of the Board which should be taken care of by the office filing the data. Reference to the writer's paper (The New York Unit Statistical Plan; A Method of Preparing and Reporting Data and Analyzing the Carrier's Business, *Proceedings*, Vol. XVII, page 190) will indicate that the State Fund assumes a large share of this responsibility. Much of the auditing procedure outlined by Mr. Kormes should gradually become unnecessary if the reporting carriers can be educated to devise ways and means of checking their data before filing with the Board. It is to be hoped that steps in this direction will be taken so that the Board's burden may be lightened.

Punching and Verifying

It appears to be in order to comment favorably on the improvement in the punching of loss cards suggested by Mr. Kormes under date of July 8, 1932 to members of the Board Actuarial Committee. This contemplates the recording of the entire loss on one claim (both compensation and medical losses) on one

punch card, by using the payroll columns for indemnity losses, the premium or incurred cost columns for medical losses, and the number of risks column for the punching of the designation for compensable claims. As Mr. Kormes points out, this will produce a considerable saving in the number of cards used, and will also make available the average medical cost by kind of injury. In view of the rising cost of medical treatment, additional data of this character may prove to be of considerable value. The check tabulations will now show indemnity and medical losses separately, instead of only total losses incurred.

Revisions

It is pointed out that the audit and recording of revision cards and second, third and fourth reports is considerably more laborious than the handling of original reports. This is naturally to be expected. The answer seems to be that constant use of the Plan will tend to eliminate errors, both by the carriers and the Board. The writer believes it proper to refer to the original report in recording revisions, to guard against improper adjustments which might be made if the "Previously Reported" columns of the revised cards were arbitrarily assumed to be identical with the original cards. When eighty-odd carriers are reporting data to the Board, probably no two of which use the same internal system, it is hardly to be expected that results will be uniformly accurate. If all carriers could be persuaded to punch their own Hollerith cards for internal analysis work from their experience cards before submitting them to the Board, the writer believes it would go a long way toward improving the accuracy of the experience cards themselves.

Tabulation of Experience

In connection with the recent change in the loss card outlined above, it is assumed that this change will be carried through to the master cards. There is adequate space on the master card to permit the separation of indemnity and medical losses. It also seems desirable to consider the separation of indemnity and medical losses on the risk cards. The writer believes that such a separation would be of greater value than the payrolls punched on the risk cards, as these payrolls usually cover a number of classifications, and are therefore of no value except as a check

on the payrolls punched on the premium cards. On the other hand, the question of rising medical costs has become so acute that all possible data that might be of value should be obtained.

After reading Mr. Kormes' paper, one cannot fail to be impressed with the magnitude of the Board's task and the difficulties surrounding its work. The introduction of the Unit Statistical Plan multiplied the detail work of the Board, and, as any new procedure will, caused great difficulty in the accurate recording of the mass of detailed information suddenly made available. Mr. Kormes and the entire staff of the Board are to be complimented on their handling of a difficult task.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. MARK KORMES:

Mr. Marshall's discussion of my paper may be justly considered as a paper in itself because his description of the methods used by the National Council forms a valuable contribution to the future possibilities of unit reports. In particular, the method of showing the governing classification on all premium and loss cards is of vast importance in connection with studies which are conducted from time to time by rating organizations in determining the scope of the classification or the inclusion and exclusion of certain hazards when changing the phraseology of certain classifications. Mr. Marshall also points out that another important phase in obtaining valuable information is the punching of indemnity and medical losses on one and the same card thus permitting an analysis of medical costs for the various kinds of injury and at the same time reducing the number of punch cards to a considerable extent. The advantages of these features are so apparent that the Actuarial Committee of the Board has recently adopted both methods beginning with the punching of experience for policy year 1931.

Mr. Marshall also mentions the desirability of identifying occupational diseases on loss cards. This leads to the question of indicating the detailed nature of injury in connection with compensable claims which, however, would require additional

labor on the part of the carriers as individual reports are required only in connection with Death, Permanent Total and open cases. The vast majority of loss reports represent, however, closed cases and the information as to the nature of injury is not available. The information, therefore, obtained from the present reports would be only partial and hardly conclusive. At the present time, however, there is a tendency to reduce the amount of work rather than to increase it and unless future developments will make it imperative there is very little hope of adoption of this refinement in connection with the Unit Statistical Plan. So much for the positive criticism of Mr. Marshall.

As regards the audit of experience, Mr. Marshall is under the impression that the New York Board confines this work to a rather superficial review of the experience and that a complete audit is made in isolated instances. It is true that the paragraphs relative to the audit of experience are rather short and do not cover completely all of the phases of the work performed by the auditors so that many a reader may come to conclusions similar to those of Mr. Marshall. May I, therefore, be permitted to elaborate upon the statements relative to this work.

The review of the individual accident report is extremely thorough, every phase of it being scrupulously examined, not only as regards the classification of injury but also as to the assignment of the losses to the manual classification by reviewing the occupation of the injured and the description of the accident. Reserves are checked as to whether they correspond with the provisions of the Law and in all doubtful cases the carriers are immediately asked for additional information or explanation. Not only are losses criticised whenever undue proportion is assigned to the highest rated or governing classification but frequent accidents for a given classification are also compared with the payroll exposure shown for that classification to determine the reasonableness of their occurrence. As regards the payrolls and premiums it is the Board's practice to investigate all cases where the payrolls appear to be estimated and which indicate an arbitrary split of payrolls between classifications. Experience cards showing classifications which are frequently improperly assigned are referred to our Inspection Department for a check-up on the propriety of classification. It will be apparent from

the above that the audit work performed by the Board is as thorough and far reaching as possible under the circumstances. In view of the vast amount of reports received annually by the Board, a review of every single file is practically impossible.

As regards the technical question raised by Mr. Marshall relative to the desirability of punching premium, loss and risk cards on a universal card, it may be well to point out that the number of punch cards prepared by the Board annually is approximately a million and a quarter. The use of several types of cards would necessitate the separate punching of premium, loss and risk cards or repeated punching of thirty-four columns which are identical on all cards for each risk. This work is being done now on an automatic duplicator, but it would not be possible if different types of cards were to be used. Inasmuch as the loss and risk cards constitute approximately one-half of all the cards, the adoption of a different card would cause an unwarranted increase in the cost of punching. On the other hand, it should be noted that the Board has experienced no trouble whatsoever in connection with the use of the universal card for the reason that as soon as the check tabulation is completed (see page 108) the premium, loss and risk cards for each shipment are filed in separate cabinets so that any confusion is impossible. The actual results of the tabulation for policy year 1929 where the differences between the tabulations and the controls are less than two-tenths of 1% for each type of card seem to prove the above contention.

Mr. Wheeler's discussion confines itself to the comparison of the method of tabulating the experience as adopted by the Massachusetts Bureau and the New York Board. He seems to favor the Massachusetts method of preparing carriers' Schedule "Z" and control by class in addition to the control by carrier. In this connection it may be well to point out that the primary purpose in the adoption of the Unit Statistical Plan in New York was the determination of the differences apparently existing between the risks of various premium sizes. For this purpose it is important to have the various premium size groups for each industry group brought to the manual level which is only possible under the procedure adopted in New York. From this point of view, the New York method of tabulating premium cards by industry group and by premium size group further subdivided

by classification and month of issue represents a more important tabulation than that of the individual carriers' Schedule "Z" experience. If the Massachusetts Bureau would desire to prepare such a tabulation they certainly would have to make a second sort and a second tabulation of their punch cards.

The fact that the carriers are forced to submit to the Massachusetts Insurance Department individual Schedule "Z" reports has caused the adoption of different methods in Massachusetts than those adopted in New York. On the other hand, the mechanical equipment of the New York Board was not until recently adequate and the preparation of individual carriers' Schedule "Z" experience was for this reason entirely out of the question. It may be also well to point out that the monthly preparation of carriers' Schedule "Z" does not permit the inclusion of revisions and forces the Massachusetts Board to include all revisions with second reportings. Thus, the value of either system is only relative if we consider the conditions under which each of the systems was adopted. As to the accuracy of the method adopted in New York we need only to refer to the insignificant discrepancies mentioned above and observe that with a tremendous volume of punch cards minor discrepancies are unavoidable.

In this connection, the author wishes to remark that the Board has recently adopted the monthly tabulation of all premium cards regardless of carrier by industry groups, premium size groups and classifications, followed by a subsequent tabulation of individual carriers' Schedule "Z".

Mr. Graham's discussion presents a review of the Board's work from the point of view of a carrier's statistical department. He has pointed out certain removable defects in the methods employed by the Board. Some of his suggestions go beyond the scope of the paper as they reflect the most recent developments in the office procedure. In particular, the writer is gratified to know that there are some carriers who go to the task of checking carefully the reports prior to their submission to the Board. If all carriers followed this practice it would undoubtedly tend to minimize the amount of audit work and correspondence and permit the shortening of the statistical procedure. The advantages are quite obvious.

ON VARIATIONS IN COMPENSATION LOSSES WITH CHANGES IN WAGE LEVELS — PAUL DORWEILER

VOL. XVIII, PAGE 128

WRITTEN DISCUSSION

MR. A. H. MOWBRAY:

This is a paper which many of our members may pass over lightly, if they read it at all, as a rather abstract mathematical discussion of theoretical problems. Thus its significance may be lost. It seems to me, however, that it is one of that type of papers referred to by President Tarbell in his opening address at the last meeting, which point the way to sounder practices in the business.

There are certain assumptions in the theoretical and mathematical discussion which are not rigidly true. I believe I was the first to advance them, some years ago. In my paper, to which Mr. Dorweiler refers, I presented tests of the apparent limits of error involved. While I think the assumptions are probably now as valid within such limits as they seemed then, were practical use to be made of precise values derived from the use of a standard wage table the results of using such a table should, of course, be checked by more recent data. I am sure Mr. Dorweiler would be quick to agree to this. Aside from this caution I find little to comment on in the paper itself.

The significance of the paper, as it seems to me, is found in Table V. The trends of loss ratios on the two bases shown in that table are important factual evidence on the question whether payroll or man-year is the better measure of exposure for workmen's compensation insurance premium computation.

In his previous paper, "Notes on Exposure and Premium Bases," (*Proceedings,* Vol. XVI, page 319) at pages 324-7, Mr. Dorweiler compared several bases for workmen's compensation premiums, and seemed to reach the conclusion that payroll is the best parameter of those studied for compensation costs. In discussing the paper (*Proceedings,* Vol. XVII, page 101), Mr. Wheeler raised serious question as to the theoretical soundness of this conclusion, indicating that perhaps Mr. Dorweiler has been influenced too much by present practice, and that further study was desirable. It would seem this paper arose from those

questions, but whether so or not it is, as I have said, an important contribution to that argument.

In his study of the data in Table V Mr. Dorweiler seems to have confined his attention to the relative responsiveness of loss ratios to changed conditions under two bases. Perhaps he has said nothing about the *manner* of response because it might have been obviously natural and at any rate is clearly shown in the table. But there are implications in that manner of response that seem to me of highest practical importance. If I am not mistaken, the adoption of the man-year or man-hour basis of premium in place of the present payroll basis would remove one cause of the difficulty in procuring approval of adequate rates for workmen's compensation insurance.

Under our present system of basing premiums on payrolls, it is necessary to increase rates as payrolls diminish, in general at a time when prices as a whole are falling. Despite the clearest possible explanation of the effect of limits and the fact that compensation is usually based on the average earnings of the injured over the past year, which average is higher than the current wage, the insured feels there is something wrong in this. True, his total premium may be less, but that is as it should be. It should be still less, for his rate is higher. It galls. This attitude is reflected in pressure upon supervisory officials against increase.

When wages and other prices go up, our loss ratios go down. If, as is usual, rates lag, then there is temptation to the various forms of abuses and excessive competition which tend to destroy the foundation of sound rates.

Were rates on a man-year or man-hour basis, Mr. Dorweiler's table shows these tendencies would be reversed. When wages fall, rates can be reduced. Not, it is true, in proportion to wages, and we might still have to explain the reason in the influence of the limits. But I believe the insured employer would more readily accept this explanation of an inability to go the whole distance than he now does when it is offered in justification of action contrary to the general trend of prices and unit costs. When wages rise, rates would have to rise, but not so far. This would be in line with other prices and would not stand out conspicuously. Further, generally wages tend to move up after other prices. Hence by watching indexes of the general price

level we might be warned in advance and be able to move more promptly. Again the use of wages of a past period for the compensation indemnity base would cause increased cost to lag behind increased wage, giving us time to adjust in advance.

If it be true that there is more malingering in times of low wages and slack employment, this would tend to prevent costs falling as far as we might infer from such a study as this. It would slacken our rate reduction. It would not add to our problem in getting *increases* as is now the case.

Against these arguments for a time rather than wage unit base for compensation insurance premiums which seem to follow from the results of this study and considerations suggested by them, we have the objection that it will be much more difficult to get the man-hours than the payrolls. It will make auditing more difficult and permit the dishonest insured more easily to deceive his carrier. Will it?

In most industries it is customary to pay employees on a time basis. Hourly, daily and weekly rates of pay are fairly stabilized in most establishments. It would seem that a careful audit should include an inspection of time books and that it should be possible to obtain from them as accurate a record as is now obtained of payroll by classification.

With all our present data on a payroll basis, the transition will be difficult. We shall have to find representative average wages by which to convert it to a time basis. We shall have to convince supervisory authorities of the correctness of the conversion. We have faced more difficult problems.

Unless I am mistaken in these conclusions to which this paper has led, is it not wise for this Society and all interested in sound rates for workmen's compensation insurance to begin an intensive study of the practical problems involved in the change from payroll to time-unit basis of premium?

We certainly owe a debt to Mr. Dorweiler for breaking new ground in this investigation.

MR. A. Z. SKELDING:

Mr. Dorweiler has made a valuable and illuminating addition to the many interesting contributions which have appeared in

the *Proceedings* under his name. A careful reading of the present paper will be of value both to the experienced insurance man and to the student preparing for the examinations of the Society.

It has long been realized that the use of payroll as the unit of exposure in compensation rate making is not entirely satisfactory. In normal times, with comparatively mild fluctuations, payroll may not be of paramount importance. However, with the advent of a period of industrial depression such as has been experienced in the last few years, with the resulting violent revision of payrolls, the basis of exposure for compensation rates does become of prime importance. This is particularly true due to the lag between the classification experience and the period to which the revised rates will apply. The use of unmodified past experience for the development of manual rates assumes, to a certain extent, that the conditions of the past are representative of the conditions that will exist while the new rates are in effect. While this may not be a particularly violent assumption in so-called "normal times," it is evident that the experience of two or three years back, particularly as respects the relationship between compensation losses and payrolls, is not a true measure of present-day conditions.

In recognition of the extreme importance of the effect of fluctuating wage levels on compensation rates, Mr. Dorweiler has prepared a comprehensive analysis for the purpose of examining "under conditions of changing wage levels, the relation of the compensation losses incurred to the exposure when expressed in payrolls and man-years, and to establish criteria for determining for which of these media there is greater responsiveness between losses and exposure."

Mr. Dorweiler points out that for the states included in his analysis and for basic rates established on a $30 wage, greater responsiveness is shown with the man-year basis of exposure than with the payroll basis. Although this is true, Table V also indicates that the use of man-year exposure, by itself does not entirely eliminate the shortcomings of the payroll basis of exposure. Neither basis produces, with varying wage scales, the expected loss ratio.

While we do not interpret Mr. Dorweiler's paper as advocating the substitution of the man-year for payroll it does seem worth-

while to mention, as pointed out in a previous paper by Mr. Dorweiler, that the use of payroll for premium determination offers a certain advantage which is not inherent in other methods in that "the need of payroll records for internal business administration and for reports emphasizes their importance, thus serving as an incentive to accuracy." It would appear that if payroll as a basis of premium were abandoned it would be necessary to substitute therefor some other criterion which could readily be obtained from the books of the assured. There are practical difficulties which stand in the way of requiring an assured to keep accurate records of data which are used for determining his compensation premium only and do not have a direct bearing on the routine conduct of his business.

If it were possible to obtain accurate current wages, it would be interesting to see a table, similar to Table V, using the current average weekly wages and the average weekly wages underlying the experience on which the rates were based.

Whether the added responsiveness to losses under the man-year basis of exposure is sufficient to outweigh the advantages of the payroll basis in other respects is difficult to answer categorically "yes" or "no." Other things being equal—unfortunately they are not—the fact that, in general, compensation benefits are a percentage of wages would make it appear that payroll, which is a function of wages, is the logical basis for premium determination.

The effect of arriving at compensation awards by the use of wages averaged over a definite period has been mentioned by Mr. Dorweiler. Under certain conditions, and perhaps the economic conditions existing today fulfill the requirements, this item may be of equal or greater importance than the lack of responsiveness of the exposure basis.

This reviewer has checked most of the formulae derived in Mr. Dorweiler's paper to see if any typographical errors have crept in. None were noticed, although all the derivations have not been scrutinized in detail. This is mentioned merely because such checking as was attempted emphasized the great amount of time which must have been required in deriving these formulae in the first instance. A reading of the paper does not stress the fact that the numerous formulae, which are read at a glance or two, each require many minutes of labor for their derivation.

REVIEWS OF PUBLICATIONS

CLARENCE A. KULP, BOOK REVIEW EDITOR

Report of the Committee to Study Compensation for Automobile Accidents to the Columbia University Council for Research in the Social Sciences. Commercial Trust Building, Philadelphia, Pa., 1932. Pp. 300.

The pedagogues of Columbia University recently gave a demonstration of real persuasive power: they not only persuaded two rival political leaders to think similar thoughts on one of the great economic issues of the day, but they were successful in prevailing upon them to express these thoughts in identical language. Having accomplished this feat, they now turn their talents to the task of breathing new life into and selling the public an idea that was advanced some years ago by Judge Marx of Ohio: the legal doctrine of negligence should be discarded in personal injury cases arising out of automobile accidents and there should be substituted in its place a

> plan of compensation with limited liability without regard to fault, analogous to that of the workmen's compensation laws.

For let there be no doubt concerning the nature of this report. It is not a dispassionate, impartial, analytical search for all the facts, nor does it involve an exploration into every conceivable method of solving the problems which undeniably exist in the present treatment of those who suffer personal injury as a result of automobile accidents. It represents very clearly an attempt to demonstrate the validity of one, and only one, program. This, in spite of the avowed intention of the Committee to make "a study of the law and of the facts with respect to compensation[1] for motor vehicle accidents, with the object of presenting an unbiased statement of its findings, and suggestions for the solutions of the problems presented". That "s" at the end of the word solution was strangely lost somewhere between the "introduction" and the "summary and conclusions" of the report.

[1] The word "compensation" is used throughout the report to refer to all kinds of payments received by injured persons.

After brief reference to the growing toll of automobile injuries, the present legal situation is described. An analysis is made of the rules of the common law and of certain statutes which have been enacted to modify these rules. The procedure of enforcing a claim for personal injuries is then presented with the idea of disclosing the difficulties which confront the plantiff in procuring witnesses, in establishing through witnesses a reliable version of the accident, in obtaining damages which conform with reasonable accuracy to the injuries sustained, in financing his case in the courts and in collecting a judgment if he should be fortunate enough to win redress. It is urged that the law of negligence has clogged the courts, thereby causing great delay in the final adjudication of cases; that the expense of litigation is excessive for claimants as well as for the public at large which must support the courts; that the temptations to fraud are irresistible.

Space is then devoted to the methods available for the insurance of the motorist's liability. The number of cars insured, the extent of policy coverage, methods of rate-making, state supervision of rates, profits (losses) of insurance carriers and procedure in adjusting claims are briefly discussed. In general the treatment of insurance, while not as complete as it might be, is eminently fair. There is an entire absence of the sort of vindicative criticism of insurance carriers which characterized similar surveys of the industrial accident problem in the days when workmen's compensation was first proposed.

There follows an analysis of the results of a study of 8,849 cases selected in ten different localities in six different states. If space permitted, much might be said in criticism of this survey as a statistical project. It is significant that no effort was made in these case studies to ascertain the cause of accidents or to establish the responsibility for the occurrence of accidents, showing that the investigation was approached with the preconceived notion that the question of negligence was inconsequential—in the Committee's mind negligence was not a factor; the only point to determine was the extent to which compensation had been paid in relation to the economic damage sustained by the injured person and his dependents.

Without conceding their validity, I present some of the Committee's conclusions as follows:

> An outstanding conclusion . . . is that a man injured by an uninsured motorist has little chance of recovering any compensation for his losses. From the point of view of the injured person, the insured defendant is very far superior to the uninsured defendant. A second outstanding conclusion is that insurance companies pay in so large a proportion of the cases in which liability insurance is carried, that the principle of liability without fault seems almost to be recognized.
>
> . . . the payments do not increase in proportion to the losses sustained. Temporary disability cases with small losses are considerably overpaid, those with larger losses are slightly overpaid, while permanent disability cases of earners —the class with the largest losses and greatest need—receive just about enough to meet the losses incurred up to the time of investigation and get nothing to apply against the continued medical expense or wage loss resulting from their impaired earning capacity.
>
> In most cases of minor injury, compensation, if received at all, is received within two months of the accident. But in cases of serious injury or death, where the need for compensation is likely to be more urgent, half of the payments are not received within six months, and most of these are not received within a year. Cases tried in the larger cities will involve still longer delays, though the final payment may be larger than in unlitigated cases.

Financial responsibility laws are next considered. In spite of the facts, first, that this type of legislation has been enacted by eighteen states and four provinces of Canada frequently after very careful study by legislative investigating committees and, second, that adequate time has not elapsed in which to determine with any degree of finality its effectiveness, the committee finds little to commend the financial responsibility laws. Some conclusions:

> The fact is that so far as the protection of the public is concerned, financial responsibility laws cannot be shown to have had much effect. They have somewhat increased the number of insured cars and they have put some careless drivers off the road, but there is no evidence that they have been able to select a class of careless drivers and to fasten insurance upon all of them,—perhaps because there is no considerable class which can be so defined and perhaps, also, because of administrative difficulties.

> After a careful consideration of all the available figures, the Committee can find no satisfactory evidence that financial responsibility laws have affected highway safety.

Compulsory liability insurance is also examined, particularly in the form in which it has been developed in the State of Massachusetts. This part of the report is worthy of careful reading, since it presents what is, I believe, the first complete analysis of the results of the Massachusetts experiment. The conclusions are interesting:

> The natural results of bringing more than 90% of motor vehicles within the insured group is to improve greatly the chance that an injured person will receive compensation and that the compensation will cover his loss. The Committee's careful studies indicate very clearly that this is so, and the law has largely achieved its purpose of protecting the public against the financial irresponsibility of motorists.
>
> Losses have risen in Massachusetts as elsewhere. But in spite of increasing losses, the insurance commissioners have promulgated premiums so low that the stock insurance companies have lost money on their automobile public liability business ever since the compulsory liability insurance law went into effect.

With regard to forcing risks upon the companies:

> In the first four years under the law, of approximately 1,100 complaints filed, less than 300 were decided against the companies after hearing or on default. . . . It is, however, probable that the companies have in the first instance accepted risks which they would not have accepted if there had been no board of appeals to compel them to do so.
>
> The Massachusetts law has greatly increased accident litigation and the confusion of judicial business generally.
>
> The Committee, after a careful study of the available figures from Massachusetts and from other states, can find no satisfactory evidence that compulsory liability insurance has affected highway safety in either direction.

And then finally the Committee takes up its pet project—the compensation plan. The analogy between automobile accidents and industrial accidents is developed; an outline of an assumed compensation plan is described; an attempt is made to estimate the cost to policyholders and taxpayers; an extended inquiry is made into the constitutionality of the plan under the Federal Constitution and under state constitutions; and the advantages

of the plan as a cure-all for the evils of the present system are eloquently elaborated. All of which naturally leads to the concluding paragraph of the report which is presented to make certain that the careful reader, in drawing his own conclusion "as to the relative advantages and disadvantages of existing systems and of the suggested plan of compensation" will obtain the same answer as the Committee.

> The Committee favors the plan of compensation with limited liability and without regard to fault, analogous to that of the workmen's compensation laws. Such a plan would eliminate the use of the principle of negligence, would place the burden of economic loss on the owner or operator to whose activity the loss is chiefly due, would provide for an equitable distribution of the insurance fund according to the extent of the economic loss, and would provide a prompt remedy at small cost to the injured person or his family. The operation of such a plan would be of special benefit in the majority of cases of serious injury or of death. The Committee believes that such a compensation plan would be workable, that its cost to motor vehicle owners need not be unreasonable and that it would not violate the due process clause of the Federal Constitution.

There were three distinct periods in the historical development of workmen's compensation. During the first of these the common law rules of negligence as between master and servant were formulated. The principles underlying these rules were conceived before the advent of our modern industrial system. As a consequence, just as soon as industry began to become mechanized, they were found to be cumbersome, inequitable and ineffectual in dealing with the problem of industrial injuries. The second period was devoted to efforts to remedy the difficulties of the common law by legislative enactment. This was the period of employers' liability legislation which continued the fundamental conception of a system of indemnification based upon negligence but sought to modernize it and to render its application simpler and more equitable. But this experiment served no good purpose—on the contrary, it aggravated rather than ameliorated the conditions which were subject to criticism.

Then came the realization that the real remedy lay in the abandonment of the law of negligence and in the substitution

for this law of the principle of workmen's compensation. The period of workmen's compensation legislation followed. During this period workmen's compensation laws have been quite generally enacted until today only four states adhere to the generally discredited system of employers' liability.

If I interpret correctly the Committee's mental attitude, it is simply this: the problems in the fields of automobile accidents and industrial accidents are fundamentally comparable. History is repeating itself in that serious difficulties have developed in the application of the law of negligence to injuries arising out of automobile accidents. The acceptable solution in the case of industrial accidents was workmen's compensation. If this is to be the ultimate solution for automobile accidents—and since the problems are similar this seems certain to be the case—why not profit by our experience, omit entirely the second period of legislative activity, and enter immediately upon the third period of compensation legislation? Not a bad argument if the premise is correct.

As an employee of an insurance carrier, I realize that I run the risk of having my motives questioned. As fair as the Committee has been to corporate insurance, it attributes the attitude of stock companies toward the Massachusetts compulsory automobile law to "their dislike of rate regulation, and their fear that the state will organize an exclusive state insurance service and drive the companies out of the field." As if there were no other less mercenary reasons for opposing compulsory automobile insurance!

It is with some trepidation, therefore, that I venture to advance the thesis that the problems of automobile accidents and industrial accidents are not comparable and do not, therefore, require the same solution. In fact, I am inclined to believe that it would be a serious mistake to remove entirely the element of personal responsibility from the automobile situation.

In the case of industry, it may be argued that the employee creates a product or service for the benefit of the community which should compensate him if, in the process, he sustains an injury. But who would argue that when I take my family out for a pleasure jaunt of a Sunday I am doing anything to advance the interests of the community? I create nothing of value to any-

one except myself and family and it seems somewhat far-fetched to maintain that if I am injured in the process of having a good time the community owes me a debt of compensation. As an abstract matter of social justice, therefore, I fail to see the validity of the argument that society should arrange to indemnify me if I happen to sustain an injury while using my automobile.

The Committee brushes aside the contention that in one case the relationship of master and servant or employer and employee exists, whereas in the other there is no relationship at all except such as may arise out of the common use of the highways. I think that this distinction is important.

The relationship of master and servant implies control by the master over the activities of the servant and over the conditions of employment. No one (except the state and its legal subdivisions) exercises the slightest control over my activities as a motor vehicle operator. The responsibility is fully mine to keep the motor vehicle in good mechanical condition and to see that it is properly operated. I know from experience that I own a potentially dangerous piece of mechanism and that the consequences of improper maintenance and operation are most serious. My responsibility is an intensely individual one and any measure that would make me feel that I need not exert myself to the utmost to promote safety is a step in the wrong direction; more individualism rather than less is required.

The matter of responsibility has a distinct bearing on the question of prevention. The employer who pays the initial cost of workmen's compensation insurance can be influenced through merit rating and other devices varying cost, to prevent accidents and he can accomplish results because he controls the situation. It is not likely, since the experience of one unit has no evidential value, that we can ever so efficiently rate the individual private pleasure car as to exert any appreciable pressure upon the owner to adopt safe practices. The pressure must come through the ever constant fear that unsafe practices will bring direct penalties in personal injury, property loss and the economic consequences which would flow therefrom.

Furthermore, while it may be constitutional to require me to pay compensation to an automobile driver who negligently rams my car, I cannot believe it is in accordance with good public

policy to encourage the sort of thing which the Committee sponsors in its suggested compensation plan.

> Compensation is to be paid in respect of any injury or death caused by the operation of a motor vehicle, unless the person injured or killed wilfully intended to cause injury to himself or to another. The Committee believes, also, that injuries to owners and operators of motor vehicles should be excluded, unless they are caused by another motor vehicle. An operator, for example, who is injured by driving his car into a tree, will not receive compensation, because to allow him to do so would open a wide door to fraud.

But let this reckless driver, instead of wrapping himself around a tree, wantonly crash into my car in which I am carefully transporting a few of my friends and spill us all over the landscape:

> Here the Committee believes that it will be best to require each owner to compensate the occupants of his own motor vehicle, except the owner himself, who will look to the owner of the other motor vehicle for compensation.

Lawyers may say that I am not being deprived of my constitutional rights when I am forced to pay compensation to the reckless fool who caused the accident and also to those riding with me at the time of the accident; but I repeat that I fail to see the justice of such a requirement.

The driver who caused the accident should be put in prison rather than compensated. Neither I nor the public owe him the slightest obligation except perhaps to keep him off the highway. Accidents are inevitable, but the element of human control is greater by far in automobile accidents than it is in industrial accidents. And I maintain that compensation under the proposed law would inevitably lessen control and thus increase the real evil, which is the production of accidents. I realize that this is in a sense an argument against insurance, since insurance does lessen the individual's responsibility for automobile accidents. But the proponents of this law would go further and, by compensating the reckless driver for his own injuries, remove the one important deterrent against carelessness that now exists.

Parenthetically I may add that I am convinced that prevention is the all-important problem today in the field of automo-

bile accidents. The danger of adopting any plan of alleviating the losses of those who are injured is that this palliative will detract attention (as it always has in this carefree country) from the absolute necessity of curbing automobile accidents. And it is certain that automobile accidents can be prevented to a far greater extent than industrial accidents. It would be most unfortunate, therefore, if we relaxed for one moment our efforts to reduce the automobile accident problem to its lowest terms. In this connection I cannot refrain from pointing to a conspicuous example of failure to cure a great human evil by legislation—the eighteenth amendment. Conceived by worthy, intelligent people as a method of enforcing sobriety, the national prohibition experiment certainly has failed to accomplish its purpose. It stands discredited today as a venture in prevention which did not prevent.

"Well," my opponents will say, "if not compensation, what is your solution? You admit that the present system is imperfect." Frankly, I have no solution. I would not make the mistake the Committee has made and dogmatically advance a cure-all at this stage of the game. I prefer to maintain an open mind. But there are certainly alternative remedies that might be considered. For example, there is the possibility of accepting the quasi-judicial procedure of workmen's compensation while retaining the doctrine of negligence with some modification of the principle of contributory negligence—something similar to the doctrine of comparative negligence is what I have in mind.

This would cure many present day evils—confusion in the courts, red tape, delay, expensive litigation, awards that bear no relationship to the injury sustained. It would be an evolutionary rather than a revolutionary move. As a solution it is worthy of investigation. So are many other ideas that may be advanced.

We are dealing with a very complex phenomenon. Too much haste in adopting a new system may be fatal. We can well afford to do a little experimenting. For it is true that the problem of automobile accidents is not fundamentally different from many other problems to which the law of negligence is now applied. How unfortunate it would be, for example, if a person run down by an automobile were compensated while another struck by an electric car, a steam engine, a bicycle, a motorboat,

a saddle horse or a horse-drawn vehicle were denied similar treatment. The Committee's answer to this is that automobile accidents represent

> a very large number of cases, peculiarly difficult to handle under the existing system, and involving the use of dangerous instruments which are already generally recognized as proper subjects of special control.

I insist, however, that no plan of treatment for personal injury cases other than industrial injuries is sound unless it rests upon such broad, logical principles that it may have general application throughout the entire field. We have "muddled along" for years with our present system. No great harm will be done if we move slowly to devise another better one that will stand the test of time.

G. F. MICHELBACHER.

The Real Meaning of Social Insurance. By Hugh H. Wolfenden. The Macmillan Company of Canada, Toronto, 1932. Pp. 227.

A brief foreword by Mr. G. C. Moore explains that this book is the outcome of a comprehensive study undertaken by the author under the auspices of the Canadian Life Insurance Officers' Association as a result of the "attention which has been attracted in Canada during the past year or two by advocates of social insurance of one kind or another." Following a preliminary chapter covering some definitions and fundamental principles of insurance in general, a review of the history of different forms of social insurance leads to a presentation of present day facts in Europe and America and thence to a discussion of methods of meeting the social needs involved, with especial reference to the situation in Canada. The preliminary chapter begins with a definition of social insurance "as it is generally understood" and as it appears the author intends to interpret it:

> The term "Social Insurance," as it is generally understood, concerns the methods of guaranteeing income to workers and their families in the case of accident, sickness and invalidism, old age, death and unemployment—the creation and administration of such schemes being usually, either in whole or in part, in the hands of the State, which assumes the ultimate responsibility for the financial sufficiency of the

plan, and prescribes the bases upon which employers or employees, or both, are obliged to participate.

In the same section, we find the significant sentence:

> The main feature which differentiates governmental schemes of "social insurance" from voluntary plans lies in the compulsory methods which governments are in a position to enforce, and in the changes which this compulsion brings —as will become evident later in this book—in the ethics and practical operation of the business.

The author makes much of the fundamental principles set down in this first section. After explaining that the form of organization may be proprietary or mutual with participating or non-participating contracts, he emphasizes that the business of insurance is essentially cooperative, whether the administration is proprietary or purely mutual and states that:

> . . . the policyholder of a well established and efficiently managed proprietary organization will secure from his association with his fellow policyholders results which differ to quite an immaterial extent from those obtainable by the similar association of a group of policyholders in a mutual fund.

While the author refers back to these fundamentals at a number of different places in the book, his statements lead, in the introductory chapter, to the thought that:

> . . . governmental operation of insurance does not imply the socialization of an otherwise predominantly capitalistic business and consequently no such economic issue is involved as that encountered in proposals for the public ownership of other enterprises.

The factual portion of this book is difficult to summarize. It is in itself a most painstaking review of the literature of social insurance in Europe and America and shows clearly the extensive and searching study which the author has made. The chapter entitled "General History" gives briefly, but in carefully detailed form, the landmarks in the development of different forms of social insurance, covering separately: Industrial accident (workmen's compensation) insurance, health (or sickness) insurance, old age pensions, widows' and orphans' pensions, mothers' allowances and unemployment insurance.

A brief chapter on "The Causes and Extent of Dependency, Poverty, etc." reviews the results of different investigations along this line. Then follows another short chapter describing the different "Existing Organizations" aside from state operated insurance arrangements for meeting the needs for which social insurance is usually advocated. The parts played by friendly societies of Great Britain and European countries, fraternal societies in the United States and Canada, labor organizations, funds established by industrial plants, teachers, railroads and insurance companies are reviewed principally by means of references to a large variety of publications covering the subject matter.

A chapter entitled "The Features of Existing State Schemes" covers in considerable detail the present situation in Germany and Great Britain, taking up separately health insurance, old age benefits and unemployment insurance. The final pages of this chapter cover the situation in other countries by reference to the recently published monographs, numbers one, two and three, of the Metropolitan Life Insurance Company, on unemployment insurance, old age dependency, and health insurance respectively and to some other publications giving similar information.

Up to this point (page 81) the book consists almost exclusively of statements of fact, most carefully recorded from a wide range of sources, but the reader who goes further finds very soon that the author is not writing without a point of view. The remainder of the book is just as carefully written and is surcharged throughout with quotations and references showing a wide and careful study of literature on all sides of moot questions. But these facts are marshalled with unusual skill to establish a definite point of view toward the question of the adoption of governmentally operated social insurance schemes in Canada.

In a chapter on "The Financing and Cost of State Plans" contrast is drawn between the "assessment method" and the "insurance method"—this latter involving "capital" and actuarial reserves—of financing social insurance schemes. It is pointed out that the "assessment method" is suitable if the annual expense remains fairly consistent as in sickness insurance, while reserves are more appropriate for old age pensions "if it is desired to

avoid a formidable progressive increase in expenditure as the scheme grows older." Continuing this discussion of method, the author states that:

> The reason for the adoption on the Continent of the assessment system is that the capitalization method is not suitable where the cash benefits vary with wages—for it is impossible to foretell accurately the variable wages during the economic activity of a worker, and the capitalization system is appropriate only where the benefits are uniform throughout the time during which the insured person is connected with the scheme.

While there is, of course, difficulty in determining proper reserves for benefits which depend upon variable wages, one may wonder if the reserve method would have been used on the Continent in recent years even if this difficulty had not existed. It would seem also that the desirability of avoiding "formidable progressive increase in expenditure as the scheme grows older" would be independent of the difficulties in accurate determination of reserves. The author repeatedly points out the difficulty involved in determining "with any real exactitude the cost of social insurance plans" because of the manner in which the details of administration are divided between different government employees.

A chapter entitled "The Problem of Medical Care" is of particular interest with reference to health insurance. Many suggestions regarding state control of medical service are the outgrowth of the defects of our present individualistic medical service, but there are, of course, serious difficulties in socializing such service. Some of these difficulties exist in any country and some apply with more force in countries like the United States and Canada, consisting in part of populous cities and in part of sparsely settled regions. These problems are receiving close attention at the present time. Methods of organization of medical service discussed are: private group clinics, traveling clinics, university medical service, industrial medical service, the municipal doctor, the county health unit, and the medical guild.

In taking up the problem of unemployment insurance specifically, the author points out the necessity of careful definition in order to exclude unemployment arising from causes covered by

other forms of insurance or preventable by the employee. Seasonal, cyclical and technological unemployment are discussed as is also unemployment due to trade restrictions, disability, old age and monetary policy. A very important chapter is entitled "Measures for Dealing With Unemployment, Other Than Compulsory State Insurance." Among the topics discussed in this chapter are: The removal of children from industry, wage reductions or adjustments, "rationalization" of industry, labor exchanges, emergency public works and the adjustment of regular public work—advance planning. It would seem that a method of much more practical importance today than the removal of children from industry would be the removal of the aged from industry. In other words, old age pensions have a distinct place among the measures preventive of unemployment in addition to their intrinsic merit of caring for the particular beneficiaries.

Methods of insuring the unemployment risk other than by state operated schemes are discussed, such as insurance by trade unions and fraternal societies and by various plans more directly connected with particular industries, probably the most widely discussed one being the so-called Swope Plan.

In a concluding paragraph to this chapter, the author starts out by stating:

> The preceding recital of possible alternatives to state unemployment insurance draws attention to the fact that hitherto industry has not been able to prevent or systematically to relieve unemployment, and that the feasibility of insurance by private companies is doubtful.

To evaluate for the present emergency the various suggestions as to methods of dealing with unemployment, the author states that we must consider the causes of the depression. He gives them as (1) increase in industrial production, (2) trade barriers all over the world and (3) disturbance in the world's distribution of gold as a result of the war. He points out that steps to deal with this situation must be international in character and his statements of remedies are too long to quote and too condensed to summarize, but are well worth reading. He points out that unemployment cannot be removed as a "major symptom of trade disturbance . . . by the adoption of merely remedial palliatives, such as unemployment insurance." Insofar as unemployment

insurance will help, he feels that it should be through schemes "confined within each industry of every country, and in no sense to be nationally administered."

The remainder of the book consists of chapters giving arguments for and against state insurance. The arguments for state insurance, however, serve largely as "straw men" as the author takes occasion to destroy them one by one as he presents them. In combating the claim that compulsory state insurance is cheaper than that privately solicited, the author states that the cost of solicitation under voluntary insurance "is simply replaced, in a state scheme, by an equally expensive or even larger organization for 'compulsion'. . . . The so-called 'lower cost' of a state scheme is thus simply a different cost . . . at least as large as the 'solicitation' cost of voluntary plans." The figures which are given in support of these statements, however, are not detailed, perhaps because of their elusiveness.

Probably no better statement of the most generally accepted point of view of the opponents of social insurance can be found than in the first sentence in the chapter presenting arguments against state insurance:

> All forms of social insurance are largely incompatible with the spirit of individual freedom, responsibility, and initiative which is so largely characteristic of North America.

Perhaps this should not be called an argument, but rather a philosophy which must be either accepted or rejected. In another place, the author points out that both workmen's compensation and mothers' pensions "have grown with great rapidity and have functioned to the general satisfaction of the taxpayer as well as of the parties directly concerned" and records his conviction that:

> . . . The fundamental characteristics of North American social-economic thought would have included several of the suggested forms of social insurance legislation had their adoption at any time seemed to be not inconsistent with other existing legislation or with North American methods of encouraging success and independence.

The cost to employers in Great Britain for contributions for workmen's compensation, pensions, health insurance and unemployment insurance in 1929 was less than 1 per cent. of the gross

output of British industry according to a report mentioned in the text. Even this, however, had serious consequences in British industry due to foreign competition.

Throughout the concluding chapters of the book and in the final summary, the author points out that at best insurance is only a palliative and that the more important task is to devise preventive measures. It would seem that practically all students would agree with this point of view. However, there may be some question as to whether or not the author has given proper attention to his statement that industry has not been able to prevent or systematically relieve unemployment. The reader of this book cannot but admire the research which it represents and the logical arrangement of the argument, but many students of these problems are convinced that we must at times deal with situations in which emotion is probably far more important than logic—situations in which feeling prevails over thinking. Of course, none of us are unaware of this situation and the task of various students of these questions is, through calm thinking, to devise the best solutions within their power to meet situations as they actually are.

Without question, this book is a valuable addition to the literature on a timely topic. It will be useful to those who want reliable information as briefly as possible and as a reference book for those who are prepared to make a more serious study of the subject. The Canadian Life Insurance Officers' Association is to be commended for the method chosen in directing a thorough investigation by a competent investigator. While the book is more than an unbiased study, in that it develops a definite point of view, it should be quite helpful to any student regardless of whether or not he finds it possible to accept the author's conclusions.

RAINARD B. ROBBINS.

Extended High Yield Bond Values. Financial Publishing Co., Boston, 1932. Pp. v, 114.

These tables are supplementary to "Consolidated Tables of Bond Values" by the same publishers, which showed yields on bonds up to 15%. The present tables show yields from 15¼%

up to 50%. This extended range will cover the yields on bonds at the lowest prices where "yield" retains any vestige of meaning.

Fourteen coupon rates are given. Values corresponding to intermediate coupon rates may be obtained by interpolation by simple proportion.

Bond values are given to two decimal places for the coupon rates, 3, 3½, 4, 4¼, 4½, 4¾, 5, 5¼, 5½, 6, 6½, 7, 7½, 8%, to yield rates 15¼% to 24% by ¼%, 24¼% to 29% by ½%, 30% to 35% by 1%, 40% to 50% by 5% for the following maturities:

Monthly to 1 year, quarterly to 2 years, semi-annually to 15 years, annually to 25 years, and for 5 year periods to 50 years.

The maturities have been shown at intervals sufficiently close to insure only a small change in price between them.

These tables form a very welcome addition to those previously available in view of the high rates earned on many bonds at the present time.

L. A. H. WARREN.

Le Imprese di Riassicurazione. Bruno de Mori. Revista Italiana di Ragionieri, Rome, 1932. Pp. 124.

This little volume describes the nature of the reinsurance contract, the types of treaties, the technical organization of the reinsurance business, the precise practices in effecting cover through coinsurance and through facultative and obligatory arrangements and the financial and accounting problems of reinsurance. The appendix contains twenty-eight model forms used in the practical conduct of Italian reinsurance transactions. Dr. de Mori is Director General of the Italian Union for Reinsurance and his manual will be of interest and value to students of international reinsurance practices.

E. W. KOPF.

Approach to Reinsurance. H. Ernest Feer. Insurance Institute of America, New York, 1932. Pp. 60.

This pamphlet by one of the outstanding reinsurance authorities in the United States is a thesis submitted in partial fulfillment of the requirements for Fellowship in the Insurance Institute of America. It should be of interest and value to our students, for whom we have so far presented little or no study mate-

rial on this organic aspect of insurance in this country. May we look to Mr. Feer for a larger and more comprehensive text on reinsurance for the use of our student members?

E. W. KOPF.

Haftpflichtversicherung. (*Liability insurance.*) Emil Herzfelder and F. K. Katsch. E. S. Mittler and Son. Berlin. 1932. Pp. 186. Second edition, volume IV, Insurance Library Series.

This second edition of Herzfelder and Katsch's text on liability insurance is the fourth volume in the Insurance Library Series of which Dr. Manes is editor. The authors have prepared a comprehensive review of the liability insurances showing first a brief history of these branches, then a discussion of the economic significance of liability insurance, the sundry types of insurance carriers, and considerations in the official supervision of liability insurance. They then show a detailed consideration of the general elements of the liability, dividing the discussion under liabilities which attach to places, to things and to time. An excellent discussion then is presented on the internal and external organization of practical liability insurance enterprises and on the service of liability insurance in the various industries and in private undertakings. The third division of the book presents an analytical dissection of the special attributes of the liability insurance contract and closes with a discussion of the reinsurance problems involved, problems connected with the preparation of balance sheets, the computation of reserves and the taxation of the liability insurance business. A generous bibliography of the recent literature is appended.

E. W. KOPF.

Versicherungswesen. System der Versicherungswirtschaft. Personenversicherung. Band III. (*Principles of Insurance. System of Insurance Economies. Personal Contingencies.* Vol. III.) Alfred Manes. B. G. Teubner. Leipzig and Berlin. Fifth edition. 1932. Pp. 356.

This is the third volume of the fifth, enlarged, edition of Manes' text on the Principles of Insurance. The first volume

dealt with insurance in general, the second with the insurances of property interests and this concluding volume contains Manes' treatment of insurances of personal contingencies. The third volume covers in general that broad group of insurance contracts known in American and British legal circles as "contracts of investment." To construct it, Professor Manes has drawn widely on great masses of international insurance literature.

Manes divides personal insurances into two broad classes: (a) "individual" personal insurances, or contracts between a private insurer and an individual; and (b) "mass" contracts of personal insurance between a State, as carrier, and its citizens, or between mutual private carriers, and individuals where the insurance arrangement is required by statute or edict. The essential characteristic of "mass" or social insurance is the interjection of the State either as carrier or as instigator of the cover. Both the individual and mass or social insurances are embraced by the Gobbi-Manes definition of insurance. (See Vol. I of Manes' *Principles,* introductory chapter, reviewed in these *Proceedings,* Vol. 16, p. 374.)

In particular, the third volume deals with life insurances (a) contingent on death, or (b) contingent on survival; with sickness, invalidity and accident insurances under private contract; and with social or mass insurances in general and in particular.

Life insurance under private auspices is discussed historically (a) as an institution and (b) as a contract. The notes begin with primitive forms of insurances on lives, in antiquity, in the Middle Ages, through the era of gambling insurances and tontines, and up to the beginning of modern legal reserve life insurance in England. The major historical facts are given for England, France, Germany and the United States through the war and post-war periods. In this historical chapter, Manes has given nuggets of fact which cannot be found in other historical treatises on life insurance, and these relate to de-valuation and revaluation movements incidental to war, foreign exchange problems, the "fleet" or concentration movement, the historical-statistical development of life insurance in principal countries, etc.

Manes next discusses the statistical foundation of life insurance in a manner and with a thoroughness not found in any other text available to this reviewer. In this chapter the author

describes the foundations of the life insurance business in classical vital statistics, gives the essentials of life table construction, the applications of the calculus of probabilities, the intrinsic relation of life insurance medicine to vital statistics, the principles and practices of insurance medicine in general, and describes periodical medical examination and the health conservation practices of life insurance institutions the world over. It is not generally known that the present-day conservation program of life insurance institutions arose directly out of Manes' suggestions nearly 25 years ago.

The fourth chapter gives a comprehensive review of world practices in the computation of premiums and of premium reserves. This discussion deals not only with the mathematical considerations, but gives also a review of the legal and economic aspects of premium and reserve computation. This chapter concludes with a brief discussion of surplus distribution, computation of mortality gains, dividend apportionment systems and the net costs of life insurance.

The fifth chapter sets forth the mutations of the life insurance contract and describes ways in which it has been adapted to meet the special needs and circumstances of the insured. Following a discussion of the conventional forms of the contract, we find a comprehensive treatment of international practices in respect to the following variants: the single premium policy; military service life insurance; partnership and business life insurance; insurances of extra-hazardous risks; insurances of substandard lives; life insurance for women; insurance without medical examination; group insurances; inheritance tax insurance; mortgage redemption insurance; life insurance allied with building loans; annuities; widows' and orphans' funds and their special aspects; combinations of annuity and life insurance contracts; tontines; life reinsurance; and programing, or the fitting of the contract to the special needs of the prospect.

The sixth chapter is devoted to industrial insurance and to burial funds; and here the major problems of this branch of the business are described. There is a short discussion of subscription or free life insurance. There then follows consideration of burial funds in particular, church life insurance institutions, industrial insurance under State auspices, the English and Japanese

post-office life insurance system and insurance on the lives of children in general.

Sickness insurance is discussed historically and then the outstanding features of contemporary sickness insurance covers under private auspices are described. The discussion of invalidity or disability insurance includes comment on the disability annex to life insurance contracts, the disability covers offered by sundry pension funds and by industrial establishment associations. Accident insurance under private auspices is presented historically, and then comparatively for the contemporary practices. This discussion includes group accident insurance and the double indemnity feature of life insurance contracts.

Manes' treatment of social insurance is presented in eleven chapters and seems to this reviewer to be the best abridged discussion so far available in the literature. Manes gives the historical background of social insurance, states the fundamental problems involved, and then describes the very complicated organization pattern of social insurance institutions in the several countries. The sickness, invalidity, accident and unemployment branches are then presented analytically. Dr. Manes has brought all of his data in respect to social insurance down to the middle or to the end of 1931.

One characteristic of Dr. Manes' discussion of social insurance will impress the few insurance men in this country who have studied the substantive and procedural aspects of the problem for the past twenty or thirty years, and that is the success of the author in condensing within eleven chapters a reasoned, impartial and critical statement of the vastly complicated insurance machine which the European States have built up over the past fifty years. Here Manes reaches high in clarity of expression, with what brevity and force!

The intricacies of social insurance begin with the fundamental aims and impulses expressed in statutes and edicts, continue with the classes to whom cover is offered, relate to the definition, attachment, continuation and cessation of risk, to temporal changes in the administration of benefits, to financing, the computation of contributions, the nature and value of benefits, the

nature and adequacy of reserves, and the capacity of the framework of government to carry the burden laid upon it by the grounding statutes. Manes' text, if translated, would serve in the United States to refine understanding of the major elements of social insurance principles and practices and to sweep away many of the errors which have crept into the literature available to our students. Much of what has been available for reading on social insurance until very recently, *pro* or *con,* in the United States, has been based upon partial conceptions, incomplete or antiquated data and upon unfinished analyses of issues and results. The colossal texts of Brucker and associates have so far defied understanding in this country. Possibly, Manes' text will lead to a concrete restatement in this country of the complexities, frustrations, political, legal and economic snarls which have arisen out of the experience of the European countries over the past half-century.

E. W. KOPF.

The Creation and Development of an Insurance Library. Text by Daniel N. Handy, Special Libraries Association, New York, 1932. Pp. 37.

This pamphlet was prepared by a special committee of the Insurance Group of the Special Libraries Association. It comprises nineteen pages of text material and four appendices. In the text are discussed many problems presented in connection with the establishment and operation of an insurance library and the organization of insurance information. Attention is given separately to the organization of society libraries and of company libraries. Other subjects discussed are the physical layout proper for a library, material for an insurance library, the classification and cataloging of material and existing insurance libraries in the United States.

The appendices include lists as follows: books recommended on casualty insurance, fire insurance, life insurance, marine insurance, and suretyship; the principal insurance libraries in the United States and Canada; insurance annuals; and schemes for classification of the material of insurance libraries.

The advice and suggestions throughout the pamphlet are ad-

dressed largely to inexperienced librarians who are establishing insurance libraries.

In the introduction to the text of this pamphlet it is stated that problems involving the housing of insurance libraries would receive only slight attention. However, in the brief section of the pamphlet dealing with physical layout, and also in the sections dealing with organization, Mr. Handy stresses some points relating to matters of housing which are very important. He advises the librarian to engage a room for the library, even though the room be small, avoiding the temptation to accept space in a corridor or other makeshift quarters in order to economize. Such advice is excellent, as everyone who uses an insurance library knows well. It is, however, the impression of this reviewer that in most cases the librarian has very little to say about the selection of space, but must accept whatever quarters are assigned to the library by someone in charge who may or may not appreciate the requirements. If a library is not housed in a separate room, it is difficult to keep the collection of books intact. Passers-by are tempted to remove books from the shelves without having them charged; books may readily be removed after business hours, and in fact this situation arising from the use of exposed shelves sometimes becomes so serious that the librarian can scarcely be held responsible for her collection at all. There is the further consideration that facilities should be provided for the use of reference material in the library itself. The atmosphere of the library should be conducive to study. It is scarcely possible for the librarian to provide the comfort and quiet so important for reading and study unless the library is separated from the rest of the office by walls. It is hoped that the well advised suggestions of the author in these matters may be read by at least some of those who are vested with authority to provide quarters for the libraries of their institutions.

In Section V of the text, "Material for the Library", sources of insurance information are discussed, names of publishers specializing in insurance books are listed, periodicals and catalogs are enumerated and other sources mentioned. It is stated that this portion of the text is offered to smooth away some of the initial difficulties of the inexperienced librarian. It seems well

designed to serve this purpose and it should also provide the experienced librarian with a convenient source of reference in keeping her material up to date.

The portion of the text devoted to library material is supplemented by lists of books recommended in Appendix A. The author notes that it is not expected that the book-lists will "meet with the unanimous approval of all insurance readers". The books listed are those recommended for immediate purchase, presumably for the nucleus of a library, the collection to be enlarged later by the accumulation of material from the many sources mentioned in the text. The list pertaining to casualty insurance includes thirty-four items. Inasmuch as casualty insurance comprises the great miscellaneous group of insurance coverages, it is important that such a list be broad enough to include treatises on all of the casualty coverages written in this country. The list appears to meet that requirement, although some important items are omitted.

Referring particularly to the lists relating to casualty insurance and suretyship, they appear to have been compiled with the idea of furnishing material for the education of students and for reading by insurance men who may wish to improve their knowledge of a particular subject. This raises the question as to the functions of an insurance library. A library maintained by an insurance company or a casualty insurance bureau concerned with the development, establishment and administration of rates, for example, is normally operated as a service department in connection with the actuarial, underwriting, legal, engineering, publicity, stenographic, and other departments in the work of the organization and the actual conduct of the business, and serves as well as a source of insurance material for educational purposes.

In the opinion of this reviewer, the present insurance library manual would be more valuable to the inexperienced librarian if it included more advice on the selection of foundation material for direct use in connection with the work of the insurance office and in the actual conduct of the business. Space does not permit the enumeration of items needed by a library for this purpose. In the introduction to the text, it is stated that the committee has not attempted "to anticipate the problems of individual companies or associations". Perhaps the committee considered the

functions of the insurance library in its direct relationship to the business not to be within the scope of the pamphlet.

Under the heading, "Cataloging," Mr. Handy stresses the importance of keeping a serviceable catalog of insurance material giving the librarian useful suggestions for the selection of subject headings. This has been wisely done.

The pamphlet has been very carefully prepared throughout and it should serve a useful purpose. It well deserves appreciation and recognition by members of this Society, as we are in a peculiar position to profit from the efficient operation of insurance libraries or to suffer from their mismanagement.

M. ELIZABETH UHL.

The British System of Social Insurance. Percy Cohen. Philip Allen, London, 1932. Pp. 278.

As is stated in the preface, "This manual has been designed to afford a convenient means of reference for those interested in the study of our many-sided system of Social Insurance or those engaged in unravelling its complexities.

"Within the compass of a book of moderate dimensions, I have endeavored to set out, in language as free from technicalities as the subjects permit, the history of the different systems, the salient features of the Acts of Parliament, and their application to the different sections of the population."

The book comprises six chapters, one devoted to each of the subjects: health insurance; widows', orphans' and old age contributory pensions; old age pension acts, 1908-1924 (non-contributory); unemployment insurance; workmen's compensation; and industrial assurance. Each chapter is divided into two sections, the first tracing the history and development, and the second giving an outline of the scheme. The historical sections of the health insurance, unemployment insurance, and contributory pensions chapters, which are well summarized in brief form, start with the early compulsory legislation on the subject, but give no background showing the social, economic and political conditions existing prior to such legislation. Those conditions in large measure prompted the legislation and in that sense are very important in a complete historical discussion. Incidentally, such

a discussion would be of particular interest to American readers at this time.

The major part of the book is devoted to an explanation of the terms of the acts and amendments now in force. These are described in a very readable way, and present the essentials of the scheme to the layman in an understandable style and manner.

One of the most interesting features, from the standpoint of current interest, is the inclusion of the amendments added to the unemployment insurance scheme by the National Economy Orders of last fall, which were passed following the First Report of the Royal Commission on Unemployment Insurance, in June, 1931, and the Report of the May Committee on National Expenditure, in July. The former of these committees was appointed in December, 1930, and in June, 1931, issued its first report, which was in the form of an interim report. The Committee, under the chairmanship of Sir George May, considered savings in the social services as a part of a general plan for governmental economy. The unemployment insurance amendments, finally adopted, incorporated certain of the recommendations put forward both by the Royal Commission and the May Committee.

Mr. Cohen explains the adjustments in the Unemployment Fund made in connection with the reorganizing of the finances of the realm by the "National" Government in the Emergency Budget which was brought forward last year. Weekly benefit rates, except for children's allowances, were reduced by 10 per cent., rounded off to the nearest 3d. Standard benefit, as distinct from transitional benefit, was limited to a maximum period of twenty-six weeks in a benefit year, after which a fresh insurance qualification was required. Transitional payments were subjected to a needs test applied by the public Assistance Authorities, whose services and experience are to be utilized to investigate and assess needs. An increase was effected in weekly contributions to 10d. each from employers, employed, and the exchequer, in the case of men, with corresponding increases in the case of women and other classes of contributors. It was estimated that the financial effect of the changes in the unemployment insurance scheme would produce economies of £25,800,000 from a reduction in expenditure, and £10,000,000 from an increased contribution income, or a total of £35,800,000. As the total savings in national

expenditures as voted amounted to £70,000,000, the unemployment insurance adjustments accounted for over half of the total economies.

This book also gives a few well chosen statistics showing the magnitude of the different schemes as they are today, and at certain significant points in their past history.

To those who desire a general knowledge of the whole field of social insurance, with very little philosophy or technical detail, or to those who want a handy general reference, this book should prove very useful. A rather complete index facilitates reference work.

JAMES D. CRAIG.

Municipal Self-Insurance of Workmen's Compensation. F. Robert Buechner. University of Chicago Press, Chicago. Pp. xv, 72.

The author of this book is the City Manager of Gladstone, Mich., and the book was prepared as a part of a series of "studies in Municipal Management" directed by the International City Managers' Association. The purpose of the study, as mentioned in the preface, is to portray the actual experience of a number of cities and to suggest criteria that will assist the public administrator in deciding whether his city can afford to carry its own compensation insurance. In his recommendations at the end of the book, the author makes it clear that the best plan of self-insurance involves more than simply paying losses out of current income, and his conclusions on the whole seem to have been carefully drawn. The book is well written, and all facts and opinions are presented in a clear and logical manner.

The first three chapters are devoted to: an explanation of the various methods of insuring the liability imposed by the workmen's compensation act; some explanation of manual and experience rating as practiced by standard carriers, together with other technical aspects of the situation; and a discussion of the extent of municipal self-insurance in the United States. The material in these chapters is not exhaustive, but serves to give the layman a good picture of the general nature of compensation insurance.

The body of the book is given over to "case studies" in com-

pensation insurance. The author has selected eight small cities, four in Virginia, and four in Michigan, as the subjects of his investigation. The population of these cities ranges between 8,000 and 41,000. Of the eight cities, only five were self-insured, the other three insuring their compensation liability with standard carriers. The author explains that "only small and medium-sized cities were selected, because it was thought that self-insurance obviously would prove practical for large cities if it could be shown that the practice had been found sound and economical in small cities".

The general plan of the case studies consists of a comparison of incurred losses with earned premiums for the available period, which ranges from five to twelve years. For those cities which were self-insured, manual premiums, obtained by extending the payroll at the proper manual rates, were used for the purposes of comparison. Most of the self-insured cities included in this study had adopted some sort of funding system. The city of Grand Haven, Mich., for example, put into its fund annually the amounts which would have been paid to insurance companies if the city had been insured. The fund was invested in city bonds and all losses incurred were charged against this fund. In other words, the city became, insofar as its compensation obligations were concerned, a small insurance company. This method, with the addition of a reserve fund as protection during the initial stages of the self-insurance period, is recommended by the author as the ideal plan of self-insurance.

Several graphic charts are included, the general purpose of which is to show the great fluctuation in incurred compensation costs from year to year for small risks. These graphs are based on the experience of the cities included in the investigation and illustrate the author's point that there is definite need for a reserve fund in order to guard against excessive losses and make possible the budgeting of insurance costs.

It is to be regretted that more experience was not available for inclusion in the present investigation. As noted above, the experience used was that of eight cities in only two states. Many states have more liberal compensation acts than Virginia and Michigan, and there is considerable variation in the practices of the different administrative authorities, particularly in regard to the grant-

ing of lump sum payments. As the author points out, the occurrence of a fatal or permanent total case shortly after a city had decided on a policy of self-insurance might cause serious embarrassment, and would probably result in unbalancing the budget. It would therefore be desirable to study the experience of as many cities as possible, in order to learn of the various methods of handling such contingencies.

The latest experience which was available at the time this book was written was that of policy year 1929. This is another respect in which it might be desired that more experience could have been available, because compensation experience since policy year 1929 has been very unfavorable, and the protection of an insurance company has been more necessary than in the period of prosperity. There is probably an increasing tendency to malinger, since the full effects of the financial crisis have begun to be felt, and it would be interesting to study the experience of some of the smaller self-insured towns during more recent years. To be sure, relations between the cities and their employees as disclosed by this book seem to be practically ideal, due to the custom in most of the self-insured cities of paying full salaries to salaried employees in lieu of the benefits provided by the compensation schedule. However, no mention is made of the percentage of salaried employees and it is assumed that most injured workmen would be paid the benefits provided in the compensation act. It also seems reasonable to assume that self-insured cities would be adversely affected by malingering and the other causes of increasing compensation cost which have brought about higher loss ratios for insurance companies during the last two years.

Throughout the book the emphasis is placed mainly upon losses, with very little mention of expenses. For example, in speaking of one city which had insured its compensation obligations, and which had had a loss ratio of 75 per cent., the author claimed that the city would have saved 21.5 per cent. of the premiums paid the insurance company if it had been self-insured. In calculating this saving, the 3.5 per cent. state tax was deducted, but no allowance was made for clerical or administrative expenses. In some instances, casual mention is made of overhead expenses, but there is no attempt to calculate these expenses accurately. It is true that in several of the cities included in the report very

few accidents were reported and the expense of handling them was slight, since they could be handled by the city clerk and other employees already on the city payroll. In one city with a population of 8,000, for example, there were only thirteen compensable accidents during a twelve-year period. In the case of a city as small as this, the practice of self-insurance would not increase the overhead expense appreciably, but in a larger city, especially during the period following the financial depression, it is to be expected that the costs of adjusting and settling doubtful or fraudulent claims would be considerably increased.

The chief criticism of the book, then, is that it has not gone into the subject deeply enough. While a City Manager might be considerably interested in the plan of self-insurance after reading this work, it would appear to be advisable for him to make a more thorough study of the situation before committing his city to the policy of self-insurance.

RUSSELL P. GODDARD.

Reviews of the following books appear in *Transactions* of the Actuarial Society of America, Vol. XXXIII, Part One.*

Disability Benefits in Life Insurance Policies. Arthur Hunter, James T. Phillips, and Associate Contributors. (Actuarial Studies—No. 5.) Second Edition. The Actuarial Society of America, New York, 1932. Pp. 252.

Sources and Characteristics of the Principal Mortality Tables. No. 1 of Actuarial Studies, published by the Actuarial Society of America. Second Edition. Principal Contributor, James S. Elston. Associate Contributors: James R. Herman, L. K. File, Richard Little, and Hugh H. Wolfenden.

Introduction to the Theory of Life Contingencies. M. A. Mackenzie and N. E. Sheppard. Univ. of Toronto Press, Toronto, 1932. Pp. 102.

Valuation and Surplus. R. K. Lochhead. Published for the Institute of Actuaries Students' Society by the Cambridge University Press, Cambridge, England, 1932. Pp. 96.

An Elementary Treatise on Actuarial Mathematics. H. Freeman. Published for the Institute of Actuaries by the Cambridge University Press, 1931. Pp. 399.

Supplement to Medical Impairment Study; Report of the Joint Committee on Mortality of the Association of Life Insurance Medical Directors and the Actuarial Society of America. New York, 1932. Pp. 56.

Medical Impairment Ratings. Compiled and published by The Actuarial Society of America and the Association of Life Insurance Medical Directors. New York, 1932. Pp. 53.

The Real Meaning of Social Insurance. Hugh H. Wolfenden. The Macmillan Co. of Canada, Toronto, 1932. Pp. 227.

Nordic Statistical Journal. Published quarterly and edited by Dr. Thor Andersson, Stockholm, Sweden.

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* Arrangements have been made with the Actuarial Society of America and the American Institute of Actuaries for exchange of book reviews. Reviews appearing in the *Transactions* or the *Record* may occasionally be reprinted in the *Proceedings* but it is believed that reference to the former publications will, in most cases, be sufficient.—Book Review Editor.

Reviews of the following books appear in *The Record* of the American Institute of Actuaries, Vol. XXI, Part. I.

Valuation and Surplus. R. K. Lochhead, F. I. A. Published for the Institute of Actuaries Students' Society by the Cambridge University Press, 1932. Pp. 96.

Modern Insurance Developments. Edited by S. S. Huebner. *Annals of the American Academy of Political and Social Science,* Vol. CLXI. Philadelphia, 1932. Pp. 250, 6.

Unemployment Insurance in Wisconsin. Roger Sherman Hoar. South Milwaukee, Wisconsin. Stuart Press, 1932. Pp. xi, 105.

The Real Meaning of Social Insurance. Hugh H. Wolfenden. Toronto. Macmillan Co. of Canada, 1932. Pp. 227.

Social Insurance Legislation. Original and Present Provisions of the Unemployment, Health, and Pension Systems in Six European Countries. "Social Insurance Monographs" No. 4. New York. Metropolitan Life Insurance Co., 1932. Pp. 70.

Administration of Unemployment Insurance. A Brief Summary of the Essential Administrative Features of Governmental Plans in Eleven European Countries. "Social Insurance Monographs" No. 5. New York. Metropolitan Life Insurance Co., 1932. Pp. 27.

The Limitations of the Unemployment Insurance. The Need for Supplemental State Aid. "Social Insurance Monographs" No. 6. New York. Metropolitan Life Insurance Co., 1932. Pp. 26.

Disability Benefits in Life Insurance Policies. Arthur Hunter, James T. Phillips, and Associate Contributors. (Actuarial Studies—No. 5.) Second Edition. The Actuarial Society of America, New York, 1932. Pp. 252.

Unemployment Benefits and Insurance. National Industrial Conference Board Inc., New York, 1931. Pp. x, 127.

Life Insurance. Joseph B. Maclean. 3rd ed. McGraw-Hill Book Co., New York, 1932. Pp. x, 550.

Accident and Health Underwriters Guide. E. Hauschild. The National Underwriter Co., Cincinnati, 1931. Pp. vii, 244.

Supplement to Medical Impairment Study—(a) Family History of Tuberculosis, (b) Influence of Build on Mortality, (c) Mortality on Policies for Large Amounts. The Actuarial Society of America and The Association of Life Insurance Medical Directors. New York, 1932. Pp. v, 56.

Medical Impairment Ratings. The Actuarial Society of America and The Association of Life Insurance Medical Directors. New York, 1932. Pp. v, 53.

What a Life Insurance Man Should Know About Trust Business. Gilbert T. Stephenson. (International Life Underwriters Library.) Crofts, New York, 1932. Pp. x, 199.

Unemployment Insurance in Belgium. Constance A. Kiehel. Industrial Relations Counselors, Inc., New York, 1932. Pp. xv, 509.

CURRENT NOTES

A. N. MATTHEWS, CURRENT NOTES EDITOR

The Effect of Current Economic Conditions on Accident and Health Insurance

The National Bureau's experience shows that the accident loss ratio has increased from 44.2 per cent. in 1928 to 53.4 per cent. in 1931. Such an increase is about what could be expected under the existing economic conditions. However, the comparison of the curve representing accident loss ratios for the last fifty years with that of business activity published by the Cleveland Trust Company, shows that until 1916 there was no apparent relation between the two. From that time on, the curve of accident ratios has run inversely as the curve of business activity, indicating that in this period when familiarity with insurance has become so extensive, accident policyholders have learned, and some of them have taken advantage of the fact, that their insurance can be made into a source of money when sufficient need arises.

There is, of course, a normal increase in loss incidence in health insurance during such times as these. Nervous diseases and lowered resistances are the direct results of worries which invariably accompany a business depression. Temporary unemployment and reduced wages extend the normal period of disability. Selection against the insurer is bound to occur, both as to new business and renewals. Policyholders are prone to take advantage of the coverages afforded them by their policies, making claims for trivial amounts which they would not in times of prosperity. These small claims add appreciably to the work of adjusters.

Group insurance produces comparatively more favorable experience during business slumps. Premium volume shrinks but the losses are more easily controlled. To be covered, the insured must be employed, which reduces to a minimum the temptation to malinger. Insurance companies are adjusting coverages to the reduced scale of wages wherever possible, and experience rating automatically elicits the cooperation of the employer in keeping the loss ratio down.

The Bureau's experience for 1931 shows that there was a decrease in written premiums for the year for accident of about $2,500,000 and for health of about $1,500,000 while the losses showed an increase in both lines. The incurred loss ratios for 1931 and 1930, respectively, were for accident 53.4 per cent. compared to 50.0 per cent. and for health 63.8 per cent. compared to 58.8 per cent. There was a decrease of about one point in acquisition cost and a small increase in other expenses so that the net result was for accident, total expenses of 53.0 per cent., compared to 53.7 per cent., and for health, 42.7 per cent. compared to 43.2 per cent.—all of which resulted in underwriting losses of 6.4 per cent. for accident and 6.5 per cent. for health.

Before the full weight of the effects of present conditions was felt in the accident business it was becoming evident that normal losses were eliminating any chances for profit. As a first step there was put into effect on January 1, 1929, a new accident manual in which occupational classifications were rearranged according to experience, and a new B Class was added for which the basic rate was $6. In this B Class were placed occupations which had developed unprofitable experience under the Preferred or A Class on a $5 rate. Then a new program of accident coverage became effective March 1, 1932. The important changes have been what amounts to a reduction of the principal sum unit from $1,500 to $1,000, payment for partial disability from 50 per cent. to 40 per cent. and general adoption of language in the insuring and total disability clauses which will safeguard the companies against fraudulent and unmeritorious claims.

When business returns to normal these changes should permit the line to be written at a profit. To obtain such result, however, a definite standard of "selection" must be adopted and adhered to. The reforms under the new plan are not sufficient to protect the business from excessive losses due to loose underwriting.

The Effect of Current Economic Conditions on Burglary Insurance

Burglary insurance is one of the few casualty lines of insurance that continues to produce an underwriting profit and in view

of the underwriting losses sustained in the other casualty lines we must commend the burglary underwriters for this showing.

It seems that burglary insurance should be adversely affected by bad social conditions which usually result from bad economic conditions, so that the experience of burglary insurance should follow the business cycle curve. While all lines of burglary insurance during the last two years have followed this business cycle curve, still there is a deviation that shows there is something else to be considered, something deeper than a temporary economic stress, something more permanent and something more dangerous.

This "something" is nothing more or less than an evolution in the art of burglarizing and we are familiar with the effect on our loss ratios of the evolution of industry or the mechanization of industry and the evolution of the automobile as respects speed, etc., so that this evolution in the art of burglarizing will ultimately mean a bad loss ratio on the burglary insurance. In fact it is already having its effect on the loss ratio for burglary insurance.

With an approximate premium of twenty-nine million dollars per year for the years 1927 to 1930 inclusive the loss ratio for all lines of burglary insurance was 31 per cent., 32 per cent., 34 per cent. and 43 per cent. respectively, with present indications for 1931 showing a slightly higher loss ratio than 1930. The loss cost for these years follows practically the same percentage of increase.

Residence burglary insurance, however, which represents approximately 44 per cent. of the business does not show such a radical increase in loss ratio during the last two years but does show a consistent average increase each year. The cost per claim shows a consistent average reduction per year with only slightly higher increase in claim frequency during the last few years. So that, if it were only the economic conditions, this form of burglary would show the effects of petty thievery which is usually more pronounced in a period of economic stress. Theft and larceny which are a part of the residence burglary insurance, show no greater increase in claim frequency than the straight burglary type. In fact, in our central states where the burglary conditions are so universally well known, the residence portion

of the business has actually shown a decrease in the last three or four years in both claim frequency and cost per case.

On the other hand, the robbery portion of all the burglary business has shown a decided increase both in loss cost and in cost per case, this being especially true of bank robberies.

It would seem then that the burglary business is affected by social conditions, rather than wholly by economic conditions. Because social conditions have a more permanent effect, it is really dangerous for us to assume that with a change in economic conditions we will have a better experience in burglary insurance.

Crime has perfected an organization with obvious effectiveness so that the petty thievery of yesterday has become the emboldened robbery of today and if we should have any change in the Volstead Act, with of course the bootlegging profits eliminated, it seems possible that there will be a greater urge for robbery.

Crime in most cases is localized but since crime conditions spread from one locality to another, the effects of local conditions must be recognized as a factor that should be a part of the rate making program.

Today, burglary insurance rates are based upon loss ratio, principally, with some judgment element as affects the developed loss ratio. It seems, however, that unless we are to have the same unfavorable experience in burglary insurance that we have had in compensation and automobile liability we must develop rates for burglary on the basis of pure premium, taking care of claim frequency and territorial differences by a proper differential factor. We should increase our criteria of exposure as the present volume of exposure used in rate making is not really dependable with these changing conditions, and above all we should develop projection factors to take care of the apparent bad loss trend in burglary experience. By burglary experience, of course, is meant the experience of all the lines of burglary insurance such as residence burglary, theft and larceny, bank robbery, bank burglary, holdup and mercantile open stock.

It seems that the volume of premium developed from burglary lines is sufficient to place the rate making program on a more scientific basis, in order that we may take care of the trend that is now developing through the evolutions previously mentioned.

Rate Increases on Automobile Lines

Material rate increases for private passenger and commercial public liability and property damage insurance became effective early in 1932. These revisions took effect in some states on January 18, 1932, and in other states on February 1, 1932. The increases were based upon experience compiled by the National Bureau of Casualty and Surety Underwriters, and the pure premiums used as the basis of the revised rates were the average of policy years 1929 and 1930.

These revisions affected the District of Columbia and all states except Massachusetts. In some states the insurance commissioners are still withholding final approval.

The National Bureau has calculated that the revised rates combined with the elimination of merit rating will result in an increase of 16.6 per cent. in premium level for the private passenger and commercial public liability lines. A large part of this increase results from the elimination of the Merit Rating Plan.

Insurance in Latin-American Countries

The Department of Commerce has recently published a brief pamphlet on the qualification and operation of foreign insurance companies under the laws of the Latin-American countries. The author of the pamphlet is A. Sherman Christenson of the Insurance Section of the Division of Commercial Laws.

This publication treats of the legal aspects of qualification to do business in the twenty-two republics in South and Central America. The provisions of these countries with respect to required reserves and limitation of investments have been discussed, as well as governmental supervision, taxation, and special rules with regard to agents. Treatment is given to the question of whether there is any legal advantage in organizing a domestic subsidiary rather than a foreign branch or agency. The status of insurance issued by an unadmitted company is also discussed, together with the penalties upon companies or agents issuing unauthorized insurance.

Part A of this study contains a general comparative survey of the systems of insurance administration of the various govern-

ments and of the types of requirements. Part B, which is in chart form, consists of fairly detailed synopses of the controlling legal provisions for each country. This study is not intended to answer every question which would be asked by an insurance company intending to transact business in any of the Latin-American countries, but it has covered the field thoroughly enough to save considerable time for such companies as may be undecided on certain points connected with the issuance of insurance in these countries.

Insurance Courses in Europe, Summer Semester, 1932

A view of technical instruction in insurance, offered by European universities, is afforded by the following excerpts from the calendars of the universities for the 1932 summer session:

University of Berlin:

Manes (economics of insurance, and insurance social policy; exercises in insurance science); *Moldenhauer* (fundamentals of social insurance; colloquium on private insurance); *Nussbaum* (commercial paper in relation to private insurance); *Dersch* (social insurance law); *Bürger* (the law of insurance medicine; practical course for insurance physicians); *Reckzeh, Wiethold, Creutzfeld, Fränkel* and *Kock* (medical certification in insurance; forensic psychiatry; internal medicine in relation to sickness insurance; pathological demonstrations in occupational diseases).

Technische Hochschule (Berlin):

Moldenhauer (introduction to insurance); *Thielmann* (social insurance and labor law); *Lorenz* (mathematical statistics).

Handels-Hochschule (Berlin):

Hagen (insurance contract law); *Manes* (major branches of insurance; exercises in the economics of insurance for beginners).

University of Bonn:

Pietrusky (legal medicine; practical exercises in medical certification); *Horn* (insurance medicine; colloquium on accident

and invalidity certification); *Meyer* (psychiatry for the practicing physician in social insurance).

University of Erlangen:

Stucken (insurance); *von Scheurl* (social insurance law); *Schneller* (social medicine); *Königer* (certification of internal diseases, accident and invalidity insurance); *Schmidt* (mathematics of finance); *Haupt* (probabilities and statistics).

University of Freiburg:

von Bieberstein (social insurance law); *Königsfeld* (insurance medicine); *Schneider and Wartenburg* (accident and invalidity certification).

University of Göttingen:

Gutmann, von Giercke, Mirbt (seminar in insurance science); *von Giercke* (insurance law); *Mirbt* (social insurance law); *Lochte* (social medicine); *Bernstein* (probabilities; actuarial science; seminar in mathematical statistics); *Cauer* (probabilities).

University of Leipzig:

Grosse (introduction to insurance; insurance economics; exercises in insurance economics and statistics); *Rehme* (private insurance law); *Weider* (exercises in private insurance law); *Jacobi* (social insurance law); *Richter* (exercises in social insurance law); *Lange* (insurance and social medicine); *Weicksel* (social insurance medicine); *Kortzeborn* (insurance medicine; certification in accident insurance for practicing physicians); *Quensel* (accidental and occupational diseases of the nervous system); *Sigerist* (seminar in social medicine); *Lorey* (fundamentals of mathematical statistics).

University of Marburg:

Schumann (private insurance law); *Stölzel* (social insurance; administrative law).

University of Munich:

Kisch and Silberschmidt (private insurance and social insurance law); *Hecker* (life insurance medicine); *Schmidt* (accidents and injuries); *Sittmann* (accident insurance certification);

Walcher (fundamentals of insurance medicine); *Boehm* (actuarial science; seminar in statistics).

Technische Hochschule (Munich):

Dorn (private insurance); *Schmachtenberger* (actuarial science).

University of Münster:

Hallermann (private insurance law); *Besserer* (law of insurance medicine); *Tobben* (insurance medicine).

University of Tübingen:

Saleck (social insurance and public health).

University of Würzburg:

Halm (seminar in major insurance problems); *Fischer* (social medicine and medical certification); *Rost* (probabilities and mathematical statistics for insurance men).

University of Berne:

Koenig (life, accident and sickness insurance law); *Dettling* (occupational poisonings; and exercises in legal medicine and insurance certification); *Wussmann* (livestock insurance); *Friedli* (mathematical basis of sickness insurance; selected insurance problems); *Friedli* (mathematical seminar).

University of Lausanne:

Bridel (insurance contract law); *Boninsegni* (social insurance law); *Delay and Reinbold* (social medicine; medical aspects of accident insurance); *Chuard* (mathematics of finance; probabilities); *Dumas* (private insurance); *Jequier* (technique of insurance).

German University at Prague:

Hoyer (medical aspects of social insurance).

Technische Hochschule at Prague:

Korkisch (insurance and insurance law); *Rosmanith* (actuarial science. Life and invalidity insurance); *Fuhrich* (introduction to statistical method); *Leyerer* (insurance accounting).

Personal Notes

Henry Farrer is now Chief Accountant of the Insurance Company of North America in New York.

Charles H. Franklin is now Assistant to First Vice-President of the Continental Casualty Company in Chicago.

Joseph Linder, previously with Woodward, Fondiller & Ryan, is now with S. H. and Lee J. Wolfe, Consulting Actuaries, in New York.

Franklin B. Mead has been honored by having been elected President of the American Institute of Actuaries.

Louis H. Mueller, formerly President of the Varney Air Lines, is now Resident Executive of the United Air Lines in San Francisco.

Olive E. Outwater is now Actuary of the Benefit Association of Railway Employees in Chicago.

John S. Thompson has been honored by having been elected President of the Actuarial Society of America.

Armand Sommer, previously Manager of the Accident and Health Department of the Home Indemnity Company in New York, is now Assistant to Vice-President with the Continental Casualty Company in Chicago.

Floyd E. Young is now Vice-President and Actuary of the National Fidelity Life Insurance Company in Kansas City.

John J. Taheny is now General Counsel of the Associated Indemnity Corporation in San Francisco.

LEGAL NOTES

BY

SAUL B. ACKERMAN
(OF THE NEW YORK BAR)

ACCIDENT

Total Disability:—[Federal Life Ins. Co. *vs.* Hurst. 160 S. E. 533 (Ga.)]

An accident policy provided coverage when the accident wholly and totally disabled the insured from performing his duties pertaining to his occupation. The insured was a dancing teacher. He was struck by an automobile and was forced as a result of the accident to desist only from the physical act of dancing, which constituted only a small portion of his customary activities but he was able after the injury to execute many of the other important duties. The insured claimed total disability within the purview and meaning of the contract.

The court held in the negative, saying:

"The evidence abundantly established the plaintiff's contention that he was injured as alleged in the petition, but failed to show that he was wholly disabled 'from performing any and every kind of duty pertaining to his occupation', within the purview and meaning of the contract. According to the plaintiff's own testimony, he was still able to solicit pupils, collect tuition, give lectures, employ instructors, conduct a dancing hall, and to perform the other usual duties of his occupation, except the actual dancing with his pupils. He was in constant attendance at his place of business during the entire period covered by the suit, and experienced no substantial change in its operation except that he removed to a different location and brought in a partner. It is true there was some evidence that his business had ceased to be profitable, but this condition could have resulted from other causes.

"The evidence showed without dispute that, even before he was injured, he danced with his pupils only for the purpose of giving a few preliminary instructions, after which the pupils would be intrusted to other teachers for continued practice and training. Only a small portion of the plaintiff's time was ever devoted to personal activity in the way of dancing, and however

important it may have been that the pupils were properly instructed in the preliminary steps, the inability of the plaintiff to continue this part of his work did not require him to abandon substantially all of the usual and customary duties of his occupation. Under the terms of the particular contract, the plaintiff was not entitled to recover without proof of an incapacity that went at least to this extent."

AUTOMOBILE

"Auto Tours":—[Davis *vs.* California Highway Indemnity Exchange. 5 P. (2d) 447 (Calif.)]

The plaintiff while riding in an automobile operated and controlled by one doing business as "auto tours" received certain injuries in an accident which resulted from negligent operation of the automobile. At that time the automobile was being used to return the plaintiff to her home. The owner had an indemnity policy covering liability of the subscriber for injuries resulting from the operation of the automobile while used in the business of "auto tours". It was contended that the automobile used to return the plaintiff from a bus on a sight-seeing trip, which was abandoned because of the bad weather, was engaged in "auto tours" as contemplated by the indemnity policy.

The court held for the plaintiff, stating:

"A real estate firm, for the purpose of promoting sales, was using the well-known device of offering to the public free rides on a 'sight-seeing bus'. For that purpose solicitors were sent out to make appointments with people for sight-seeing trips. The prospective passenger would be given a ticket for the trip. On the morning when the trip was to take place automobiles would be sent out to the homes of the ticket holders to bring them to the centrally located point from which the bus would start. The real estate firm in the instant case contracted with Brown to furnish such Lincoln car, with a driver, to bring certain passengers to the bus. The solicitor went along in order to direct the driver to the various locations where the passengers lived. In that way respondent Mrs. Davis became a passenger on the day when this accident occurred. When they arrived at the location from which the bus was to start, it was decided that on account of unfavorable weather the trip of the day would have to be abandoned. Thereupon the Lincoln car was started back to return the plaintiff to her home. It was on this return trip that the accident occurred. These being the principal evidentiary

facts in relation to the stated issue, appellant now contends that the evidence conclusively shows that the car was not being used in 'auto tours', but that plaintiff was merely a passenger in the ordinary sense of one who is a passenger in an automobile for hire. Wherefore it is argued that the court erred in finding that at the time of said accident said automobile was being used for auto tours and was covered by the indemnity policy. It may be conceded that at the time of the accident the automobile was being used under a contract hiring it for the stated purpose; but the evidence justified the court in finding further that said automobile under said contract of hiring was being used for touring purposes, and that under the arrangement made with the plaintiff her trip or tour of the day was to begin when she left her home and end when she was returned thereto."

COMPENSATION

Course of Employment:—[Lybolt *vs.* W. H. Hinman. 157 A. 579 (N. H.)]

Claimant was employed as operator of steam shovel. By reason of the vibration of the machine, he suffered gradual breaking down of blood vessels. Claimant suddenly, after working hours, suffered a cerebral hemorrhage, and claim for compensation was made.

The Court held against claimant, stating:

"In order to establish a claim under the Workmen's Compensation Act it is necessary that three elements be proved. The injury must be accidental, it must arise out of the employment, and it must occur in the course of that employment. Assuming that the first two elements were shown in this case, the plaintiff fails as to the third. The incident relied upon as an accident was a cerebral hemorrhage, and it occurred several hours after the plaintiff had completed his day's work, and while he was about his personal business.

"The provisions that the disability complained of must have arisen through accident and in the course of the employment are common to many statutes of this class; and the decisions thereunder are unanimous to the effect that the accident must have occurred in the course of the employment. If it happens at another time and place, it is not compensable under such an act, even though it be shown that the employment was the cause of the misfortune. Out of the employment is not an equivalent for in the course of the employment.

"There must be a conjunction of the two requirements, 'in the

course of the employment' and 'out of the employment', to permit compensation. The former relates to the time, place, and circumstances of the accident, while the latter refers to the origin and cause of the accident."

FIDELITY

Ambiguity:—[American Indemnity Co. *vs.* Mexia Independent School Dist. 47 S. W. (2d) 682 (Texas)]

A fidelity bond was issued to indemnify any loss arising out of dishonesty of tax collector. The bond provided that the surety should not be liable unless acts of dishonesty should be discovered during period in which it was committed or within six months after end of period, or within six months after termination of bond or any renewal thereof by cancellation or by death, dismissal, or retirement of principal whichever of said events shall first happen. The surety disclaimed liability on ground that loss was not discovered within time provided in surety bond.

The Court held against the surety stating:

"In addition to this, the terms of the bond, fixing the time in which the shortage must be discovered, are ambiguous. The phrase, 'whichever of said events shall first happen', as used in the above quoted provision of the contract, refers to the termination of the company's liability by 'cancellation or by the death, dismissal or retirement of the principal' and not to the time within which the shortage must be discovered. The alternative provisions of the bond, connected as they are by the word 'or', apparently give the assured the option of discovering the shortage either within six months after the termination of the period in which it was committed, or within six months after the termination of the bond or within six months after the termination of the last or any other renewal thereof, regardless of the manner in which the bond is terminated. It is clearly suspectible of this construction. The company wrote the bond and chose the language desired, and we must construe it most strongly against the insurer. Insurance companies cannot thus couch their contracts in doubtful language and allow their salesmen to employ the construction most favorable to the insured to catch the unwary, and then, when the company is hailed into Court, claim the benefit of the construction most favorable to it. The purpose of the bond was to guarantee the fidelity and honesty of the tax collector, and to insure and indemnify the school district against loss by reason thereof, and was therefore an insurance contract and not one of

suretyship and is not entitled to a strict construction in favor of the surety. We hold that, since the discovery was made within six months after the termination of the last renewal it was within the time provided for in the contract."

Public Liability

Notice of Modification:—[Amer. Bldg. Maintenance Co. *vs.* Indemnity Ins. Co. of N. A. 7 P. (2d) 305 (Calif.)]

A public liability policy was issued and the printed portion of the policy provided "this policy shall not cover loss arising from bodily injuries or death caused by any elevator". Such liability, however, was included in the policy by error. The error was not corrected and the policy was signed. Shortly after a rider was prepared eliminating the error. The notice was mailed to the insured but the insured never received it. The assured claimed coverage on the policy as originally issued.

The Court held for the insured, stating:

"We are of the opinion that the second essential element enumerated is entirely lacking in the instant case. An analysis of consent shows two elements: namely, an offer or proposal, and an acceptance. In the state of proof as shown by the record, we see no escape from the conclusion that the offer of modification never reached the person having authority to accept the same, and, this being so, necessarily there was no acceptance, no consent, and consequently, no binding contract. It is to be noted that the original contract had been completed and that the attempted modification was initiated by the insurer who thereby became the offeror. The issuance of the rider was an offer or proposal by the insurance company to the insured that the original contract be modified as set out in the rider. The rider was not a notice to the insured that the contract be modified as set out in the rider. The rider was not a notice to the insured that the contract was to be modified, regardless of whether the insured was willing or not, but was a proposal to the insured which must be accepted by it before it became binding. We therefore have the situation of an offer which was never actually transmitted to the person having the authority to accept it. The offer failed to reach the offeree by reason of a mistake on the part of one employed by the offeree; but the burden of ascertaining that the offer actually reached the offeree was, we think, upon the offeror. The offeror merely because it had sent out an offer was not entitled to sit back and take for granted the fact that it had been received and had been accepted."

OBITUARY

FRANK WEBSTER HINSDALE

1862 - 1932

A Fellow of this Society since 1918, died in Vancouver, British Columbia, on March 18, 1932, aged 69 years. He was born in Brooklyn, New York, on December 13, 1862. In 1889 Mr. Hinsdale, attracted by the development of the new country then being opened up in the Pacific Northwest, started in the insurance business in Tacoma, Washington, where he soon became prominent in the life of the growing community.

When some years later the state of Washington passed a workmen's compensation law Mr. Hinsdale was selected to organize the work and assist in the administration of the Act. His success in this work was responsible for his being requested by the state of Oregon to do similar work there, and when several of the Canadian Provinces decided to enact workmen's compensation legislation he was called upon to assist in drafting the Acts and organizing the administration for each of the Provinces of Ontario, Nova Scotia, Manitoba and British Columbia.

For the past fifteen years he had been actuary and secretary for the Workmen's Compensation Board of British Columbia, being at his office until the day before his death.

Besides his wife and brother, Dr. Guy Hinsdale, he leaves friends in many parts of Canada and the United States. By those, whose fortune it was to have been associated with him in his work, he will be remembered not only for his ability and integrity but for the kindly, courteous and gentlemanly qualities with which he was so generously endowed.

CASUALTY ACTUARIAL SOCIETY

MAY 20, 1932

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*Terms expire at the annual meeting in November, 1932.
†Terms expire at the annual meeting in November of the year given.

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ABSTRACT FROM THE MINUTES OF THE MEETING

MAY 20, 1932

The semi-annual (thirty-eighth regular) meeting of the Casualty Actuarial Society was held at the Aetna Life Building, Hartford, Conn., on Friday, May 20, 1932.

President Tarbell called the meeting to order at 9:45 A. M., daylight saving time. The roll was called showing the following forty-two Fellows and eighteen Associates present:

FELLOWS

AINLEY	GARRISON	MATTHEWS
BARBER	GINSBURGH	MCMANUS
BLANCHARD	GLENN	MICHELBACHER
CAHILL	GODDARD	MOORE, G. D.
COGSWELL	GREENE	ORR
COMSTOCK	HARDY	PERKINS
CORCORAN	HAUGH	PERRYMAN
COWLES	HOBBS	SCHEITLIN
DORWEILER	HUNT	SENIOR
DUNLAP	KELTON	SULLIVAN
ELSTON	LAIRD	TARBELL
FALLOW	LAWRENCE	VALERIUS
FLYNN	MARSHALL	WAITE, A. W.
FONDILLER	MASTERSON	WHEELER, R. A.

ASSOCIATES

CONSTABLE	HARRIS	POISSANT
FITZGERALD	HART	POWELL
FURNIVALL	MACKEEN	SINNOTT
GARWOOD	MONTGOMERY	SPENCER
GILDEA	NEWHALL, KARL	WAITE, H. V.
HALL, H. L.	PICKETT	WOOD, M. J.

President Morgan B. Brainard of the Aetna Life Insurance Company made an address of welcome.

Mr. Tarbell read his presidential address.

The minutes of the meeting held November 13, 1931, were approved as printed in the *Proceedings*.

The Secretary-Treasurer (Richard Fondiller) read the report of the Council and upon motion it was adopted by the Society. Scott Harris and Joseph J. Magrath had been enrolled as Associates without examination.

The President announced the death of Frank W. Hinsdale, Fellow of the Society, and the memorial notice in this Number was thereupon read.

The new papers printed in this Number were read or presented.

The discussion of papers read at the last meeting of the Society was begun.

Recess was taken for lunch at the Aetna Life Building until 2:15 P. M.

The discussion of papers read at the last meeting of the Society was then concluded.

The following topics for which speakers had been selected were informally discussed.

The effect of current economic conditions on the principal lines of the casualty insurance business, such as:

Accident and Health	Compensation
Automombile	Fidelity and Surety
Burglary	Public Liability

1. In each of these lines what reactions have been observed or may be expected under present conditions in loss incidence, loss cost, expenses, reserves, and rates?

2. What may be done to overcome or reduce adverse effects?

The members were the guests of the Hartford Companies at the Farmington Country Club at an informal dinner on the evening of the meeting; also for golf on the next morning. By a rising vote of thanks the members expressed their appreciation of the hospitality of the Aetna Life Insurance Company and the Hartford Companies.

Upon motion the meeting adjourned at 5 P. M. Daylight Saving Time.

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CASUALTY ACTUARIAL SOCIETY

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(Corrected to February 1, 1932)

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No. 11

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NOVEMBER 13, 1931

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MEMBERSHIP OF THE SOCIETY, NOVEMBER 13, 1931

FELLOWS

Those marked (†) were Charter Members at date of organization, November 7, 1914.

Those marked (*) have been admitted as Fellows upon examination by the Society.

Date Admitted	
*Nov. 21, 1930	Ainley, John W., The Travelers Insurance Co., 700 Main Street, Hartford, Conn.
*Nov. 13, 1931	Ault, Gilbert E., Assistant Actuary, Colonial Life Insurance Co., 921 Bergen Ave., Jersey City, N. J.
May 23, 1924	Bailey, William B., Economist, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 20, 1924	Barber, Harmon T., Assistant Actuary, Casualty Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 13, 1931	Batho, Elgin R., Assistant Actuary, Ontario Equitable Life & Accident Insurance Co., Waterloo, Ontario, Canada.
†	Benjamin, Roland, Treasurer, Fidelity & Deposit Co., Baltimore, Md.
†	Black, S. Bruce, President, Liberty Mutual Insurance Co., Park Square Building, Boston, Mass.
Apr. 20, 1917	Blanchard, Ralph H., Professor of Insurance, School of Business, Columbia University, New York.
May 24, 1921	Bond, Edward J., Jr., First Vice-President, Maryland Casualty Co., Baltimore, Md.
May 19, 1915	Bradshaw, Thomas, Vice-President and General Manager, Massey-Harris Co., Limited, 915 King St., Toronto, Canada; President, North American Life Assurance Co. of Canada, Toronto, Canada.
†	Breiby, William, Consulting Actuary, Fackler & Breiby, 25 Church St., New York.
*Nov. 18, 1927	Brown, F. Stuart, Comptroller, Fireman's Fund Indemnity Company, 116 John St., New York.
Oct. 22, 1915	Brown, Herbert D., Chief of U. S. Efficiency Bureau, 408 Winder Building, 17th and F Sts., N. W., Washington, D. C.
Oct. 22, 1915	Brown, William H., Second Vice-President and Secretary, Columbian National Life Insurance Co., 77 Franklin St., Boston, Mass.
June 5, 1925	Brosmith, William, Vice-President and General Counsel, The Travelers Insurance Co. and The Travelers Indemnity Co., 700 Main St., Hartford, Conn.
†	Buck, George B., Consulting Actuary for Pension Funds, 150 Nassau St., New York.
†	Budlong, W. A., Superintendent of Claims, Commercial Travelers Mutual Accident Association, Utica, N. Y.

FELLOWS

Date Admitted	
Apr. 20, 1917	Burhop, William H., Secretary, Employers Mutual Liability Insurance Co., Wausau, Wis.
*Nov. 23, 1928	Burling, William H., The Travelers Insurance Co., 700 Main St., Hartford, Conn.
Feb. 19, 1915	Burns, F. Highlands, President, Maryland Casualty Co., Baltimore, Md.
*Nov. 19, 1929	Cahill, James M., The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Cammack, Edmund E., Vice-President and Actuary, Aetna Life Insurance Co., Hartford, Conn.
*Nov. 21, 1930	Carlson, Thomas O., National Bureau of Casualty and Surety Underwriters, 1 Park Ave., New York.
†	Carpenter, Raymond V., Actuary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
*Nov. 15, 1918	Coates, Barrett N., Coates and Herfurth, Consulting Actuaries, 114 Sansome St., San Francisco, Calif.
*Nov. 17, 1922	Coates, Clarence S., Federal California Underwriters, Insurance Center Building, San Francisco, Calif.
Oct. 27, 1916	Cogswell, Edmund S., Second Deputy Commissioner of Insurance, State House, Boston, Mass.
Feb. 19, 1915	Collins, Henry, Manager and Attorney, Ocean Accident & Guarantee Corporation and President, Columbia Casualty Co., 1 Park Ave., New York.
*Nov. 23, 1928	Comstock, W. Phillips, London Guarantee & Accident Co., 55 Fifth Ave., New York.
†	Copeland, John A., Consulting Actuary, Candler Building, Atlanta, Ga.
*Nov. 18, 1925	Corcoran, William M., Office of S. H. and Lee J. Wolfe, Consulting Actuaries, 116 John St., New York.
†	Cowles, Walter G., Vice-President, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Craig, James D., Actuary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
*Nov. 19, 1926	Crane, Howard G., Comptroller, General Reinsurance Corporation, 90 John St., New York.
*Nov. 18, 1927	Davis, Evelyn M., Partner in the firm of Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.
†	Dawson, Miles M., Consulting Actuary and Counsellor at Law, 500 Fifth Ave., New York.
†	DeKay, Eckford C., President, Industrial Service Corporation, 84 William St., New York.
†	Dearth, Elmer H., Detroit Athletic Club, Box 2, Detroit, Mich.
*Nov. 17, 1920	Dorweiler, Paul, Actuary, Accident and Liability Department, Aetna Life Insurance Co., Hartford, Conn.
May 19, 1915	Dunlap, Earl O., Assistant Actuary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
†	Egbert, Lester D., Director, Brown, Crosby & Co., Inc., Insurance Brokers, 96 Wall St., New York.
*Nov. 17, 1922	Elston, James S., Assistant Actuary, Life Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Fackler, Edward B., Consulting Actuary, Fackler & Breiby, 25 Church St., New York.

FELLOWS

Date Admitted	
†	Fallow, Everett S., Actuary, Accident Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Farrer, Henry, Indemnity Insurance Company of North America, 1600 Parkway, Philadelphia, Pa.
Feb. 19, 1915	Fellows, Claude W., President, Associated Indemnity Corporation, Associated Fire & Marine Insurance Co., Associated Insurance Fund, Inc., Associated Insurance Building, 332 Pine St., San Francisco, Calif.
Feb. 19, 1915	Flanigan, James E., Agency Manager, Bankers Life Co., 225 Broadway, New York.
†	Flynn, Benedict D., Vice-President and Actuary, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
Feb. 19, 1915	Fondiller, Richard, Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.
†	Forbes, Charles S., Treasurer, Smyth, Sanford and Gerard, Inc., Insurance Brokers, 68 William St., New York; President, Service Mutual Liability Insurance Co., Park Square Building, Boston, Mass.
Nov. 19, 1929	Foster, R. Leighton, Superintendent of Insurance, Province of Ontario, Parliament Building, Toronto, Canada.
†	Franklin, Charles H., Secretary, Continental Casualty Co., 910 South Michigan Ave., Chicago, Ill.
*Nov. 18, 1927	Fredrickson, Carl H., Actuary, Canadian Automobile and Casualty Underwriters Association, 200 Bay St., Toronto, Canada.
Feb. 25, 1916	Froggatt, Joseph, President, Joseph Froggatt & Co., Insurance Accountants, 74 Trinity Place, New York.
†	Furze, Harry, Treasurer, Globe Indemnity Co., 150 William St., New York.
Feb. 19, 1915	Garrison, Fred S., Secretary, The Travelers Indemnity Co., 700 Main St., Hartford, Conn.
*Nov. 20, 1924	Ginsburgh, Harold J., Assistant Secretary, American Mutual Liability Insurance Co., 142 Berkeley St., Boston, Mass.
*Nov. 21, 1930	Glenn, J. Bryan, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
May 19, 1915	Glover, James W., President, Teachers Insurance and Annuity Association of America, 522 Fifth Ave., New York.
*Nov. 13, 1931	Goddard, Russell P., The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Goodwin, Edward S., Goodwin-Beach & Riley, Stock Brokers, 94 Pearl St., Hartford, Conn.
†	Gould, William H., Consulting Actuary, 130 William St., New York.
*Nov. 19, 1926	Graham, Charles M., Assistant Actuary, State Insurance Fund, 625 Madison Ave., New York.
Oct. 22, 1915	Graham, George, Vice-President, Central States Life Insurance Co., 3663 Lindell Blvd., St. Louis, Mo.
Oct. 22, 1915	Graham, Thompson B., Assistant Secretary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
†	Graham, William J., Vice-President, Equitable Life Assurance Society, 393 Seventh Ave., New York.

FELLOWS

Date Admitted	
May 25, 1923	Granville, William A., Director of Publications, Washington National Insurance Co., 1737 Howard St., Chicago, Ill.
Nov. 19, 1929	Gray, V. Evan, Barrister-at-law, Sterling Tower, 372 Bay St., Toronto, Canada.
†	Greene, Winfield W., Vice-President and Secretary, General Alliance Corporation and General Reinsurance Corporation, 90 John St., New York.
†	Hamilton, Robert C. L., Comptroller, Hartford Accident & Indemnity Co., Hartford, Conn.
†	Hammond, H. Pierson, Actuary, Life Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Hansen, Carl M., President, International Reinsurance Corporation, Pacific Finance Bldg., Los Angeles, Calif.
Oct. 27, 1916	Hardy, Edward R., Secretary-Treasurer, Insurance Institute of America, Inc., 80 John St., New York.
Oct. 22, 1915	Hatch, Leonard W., Member, State Industrial Board, 80 Centre St., New York.
*Nov. 19, 1926	Haugh, Charles J., Jr., Actuary, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York.
Nov. 17, 1920	Heath, Charles E., Vice-President and Secretary, Standard Surety & Casualty Company of New York, 80 John St., New York.
Nov. 21, 1919	Henderson, Robert, Vice-President and Actuary, Equitable Life Assurance Society, 393 Seventh Ave., New York.
May 17, 1922	Heron, David, Secretary and Chief Statistician, London Guarantee & Accident Co., Ltd., 20 Lincoln's Inn Fields, London, W. C. 2, England.
†	Hillas, Robert J., (Retired) 2 Whippany Road, Morristown, N. J.
Nov. 15, 1918	Hinsdale, Frank W., Secretary, Workmen's Compensation Board, Vancouver, B. C., Canada.
May 23, 1924	Hobbs, Clarence W., Special Representative of the National Convention of Insurance Commissioners, National Council on Compensation Insurance, 151 Fifth Ave., New York.
Nov. 19, 1926	Hodges, Charles E., President, American Mutual Liability Insurance Co., Allied American Mutual Automobile Insurance Co., American Policyholders' Insurance Co., 142 Berkeley St., Boston, Mass.
Oct. 22, 1915	Hodgkins, Lemuel G., Secretary, Massachusetts Protective Association and Massachusetts Protective Life Assurance Co., Worcester, Mass.
†	Hoffman, Frederick L., Consulting Statistician, Prudential Insurance Co.; Research Consultant, Babson Institute, Wellesley Hills, Mass.; Director of Research, Aviation Business Bureau, Inc., 72 Wall St., New York.
Oct. 22, 1915	Holland, Charles H., 215 South 16th St., Philadelphia, Pa.
†	Hughes, Charles, Auditor and Actuary, New York Insurance Department, 80 Centre St., New York.

FELLOWS

Date Admitted	
Nov. 19, 1929	Hull, Robert S., Western & Southern Indemnity Co., Cincinnati, Ohio.
†	Hunt, Burritt A., Assistant Secretary, Accident and Liability Department, Aetna Life Insurance Co., Hartford, Conn.
†	Hunter, Arthur, Vice-President and Chief Actuary, New York Life Insurance Co., 51 Madison Ave., New York.
Nov. 18, 1921	Hutcheson, William A., Vice-President and Actuary, Mutual Life Insurance Co., 32 Nassau St., New York.
Feb. 25, 1916	Jackson, Charles W., Actuary, Postal Life Insurance Co., 511 Fifth Ave., New York.
*Nov. 19, 1929	Jackson, Henry H., Actuary, National Life Insurance Co., Montpelier, Vt.
May 19, 1915	Johnson, William C., Vice-President, Massachusetts Protective Association and Massachusetts Protective Life Assurance Co., Worcester, Mass.
Nov. 23, 1928	Jones, F. Robertson, General Manager, Association of Casualty and Surety Executives; and Secretary-Treasurer, Bureau of Personal Accident and Health Underwriters, 1 Park Ave., New York.
*Nov. 19, 1926	Kelton, William H., Assistant Actuary, Life Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	King, Walter I., Vice-President, Connecticut General Life Insurance Co., 55 Elm St., Hartford, Conn.
*Nov. 21, 1919	Kirkpatrick, A. Loomis, W. A. Alexander & Co., Insurance Brokers, 134 So. La Salle St., Chicago, Ill.
†	Kopf, Edwin W., Assistant Statistician, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
Nov. 23, 1928	Kulp, Clarence A., Professor of Insurance, University of Pennsylvania, Logan Hall, 36th St. and Woodland Ave., Philadelphia, Pa.
Feb. 19, 1915	Laird, John M., Vice-President, Connecticut General Life Insurance Co., 55 Elm St., Hartford, Conn.
Nov. 13, 1931	La Mont, Stewart M., Third Vice-President, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
Nov. 17, 1922	Lawrence, Arnette R., Special Deputy Commissioner of Banking and Insurance, 1203 Military Park Building, 60 Park Place, Newark, N. J.
†	Leal, James R., Vice-President and Secretary, Interstate Life and Accident Co., Interstate Building, 540 McCallie Ave., Chattanooga, Tenn.
†	Leslie, William, Associate General Manager, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York.
*Nov. 20, 1924	Linder, Joseph, Partner in the firm of Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.
Nov. 18, 1921	Little, James F., Second Vice-President and Associate Actuary, Prudential Insurance Co., Newark, N. J.
Nov. 23, 1928	Lunt, Edward C., Vice-President, Great American Indemnity Co., 1 Liberty St., New York.
Feb. 19, 1915	Maddrill, James D., Consulting Actuary, 351 West 42nd St., New York.
†	Magoun, William N., General Manager, Massachusetts Rating and Inspection Bureau, 89 Broad St., Boston, Mass.

FELLOWS

Date Admitted	
*Nov. 23, 1928	Marshall, Ralph M., National Council on Compensation Insurance, 151 Fifth Ave., New York.
*Nov. 18, 1927	Masterson, Norton E., Actuary, Hardware Mutual Casualty Co., Stevens Point, Wis.
*Nov. 19, 1926	Matthews, Arthur N., The Travelers Insurance Co., 700 Main St., Hartford, Conn.
May 19, 1915	Maycrink, Emma C., Examiner, New York Insurance Department, 80 Centre St., New York.
*Nov. 16, 1923	McClurg, D. Ralph, Secretary and Treasurer, National Equity Life Insurance Co., Little Rock, Ark.
May 23, 1919	McDougald, Alfred, Ellerslie, Beddington Gardens, Wallington Surrey, England.
*Oct. 31, 1917	McManus, Robert J., Statistician, Casualty Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
Feb. 19, 1915	Mead, Franklin B., Executive Vice-President, The Lincoln National Life Insurance Co., Fort Wayne, Ind.
†	Michelbacher, Gustav F., Vice-President and Secretary, Great American Indemnity Co., 1 Liberty St., New York.
†	Miller, David W., Assistant Treasurer, S. W. Strauss & Co., Investment Bonds, 565 Fifth Ave., New York.
†	Milligan, Samuel, Third Vice-President, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
†	Mitchell, James F., Assistant U. S. Manager, General Accident Fire and Life Assurance Corporation, Ltd., 414 Walnut St., Philadelphia, Pa.
†	Moir, Henry, President, United States Life Insurance Co., 156 Fifth Ave., New York.
*Nov. 18, 1921	Montgomery, Victor, Secretary and General Manager, Pacific Employers Insurance Co., 928 So. Figueroa St., Los Angeles, Calif.
Nov. 19, 1926	Mooney, William L., Vice-President, Aetna Life Insurance Co., Hartford, Conn.
†	Moore, George D., Comptroller, Standard Surety & Casualty Company of New York, 80 John St., New York.
†	Morrison, James, Resident Vice-President, Independence Indemnity Co., 90 William St., New York.
†	Mowbray, Albert H., Consulting Actuary, 806 San Luis Road, Berkeley, Calif.
May 20, 1918	Mudgett, Bruce D., Professor of Economics, University of Minnesota, Minneapolis, Minn.
*Nov. 17, 1920	Mueller, Louis H., President, Varney Air Lines, Inc., 310 Balboa Building, San Francisco, Calif.
†	Mullaney, Frank R., Secretary, American Mutual Liability Insurance Co., and American Policyholders' Insurance Co., 142 Berkeley St., Boston, Mass.
May 28, 1920	Murphy, Ray D., Vice-President Equitable Life Assurance Society, 393 Seventh Ave., New York.
†	Nicholas, Lewis A., Assistant Secretary, Fidelity & Casualty Co., 80 Maiden Lane, New York.
†	Olifiers, Edward, Consulting Actuary, P. O. Box 1218, Rio de Janeiro, Brazil.

FELLOWS

Date Admitted	
Nov. 18, 1927	O'Neill, Frank J., President, Royal Indemnity Co. and Eagle Indemnity Co., 150 William St., New York.
†	Orr, Robert K., President, Wolverine Insurance Co., Lansing, Mich.
†	Otis, Stanley, L., Counsellor at Law, Manager, Otis Service, 90 John St., New York.
*Nov. 21, 1919	Outwater, Olive E., Assistant Actuary, Benefit Association of Railway Employees, 901 Montrose Ave., Chicago, Ill.
Nov. 19, 1926	Page, Bertrand A., Vice-President, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 18, 1921	Perkins, Sanford B., Assistant Secretary, Compensation and Liability Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
Nov. 15, 1918	Perry, W. T., Deputy Manager, Ocean Accident and Guarantee Corporation, 36 Moorgate, London, E. C. 2, England.
*Nov. 21, 1930	Perryman, Francis S., Actuary and Assistant Secretary, Royal Indemnity Co., 150 William St., New York.
Nov. 19, 1926	Phillips, Jesse S., President, Great American Indemnity Co., 1 Liberty St., New York.
*Nov. 17, 1922	Pinney, Sydney D., Associate Actuary, Casualty Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 13, 1931	Pruitt, Dudley M., Actuary and Assistant Treasurer, Pennsylvania Indemnity Corporation, Atlantic Building, Philadelphia, Pa.
May 13, 1927	Reid, A. Duncan, President and General Manager, Globe Indemnity Co., 150 William St., New York.
†	Remington, Charles H., Insurance Counselor and Advisor, Suite 1801-1805, French Building, 551 Fifth Ave., New York.
May 23, 1919	Richardson, Frederick, U. S. Manager and Director, General Accident Fire and Life Assurance Corporation, 414 Walnut St., Philadelphia, Pa.
*Nov. 19, 1926	Richter, Otto C., American Telephone & Telegraph Co., 195 Broadway, New York.
May 24, 1921	Riegel, Robert, Professor of Statistics and Insurance, University of Buffalo, Buffalo, N. Y.
*Nov. 16, 1923	Roeber, William F., General Manager, National Council on Compensation Insurance, 151 Fifth Ave., New York.
†	Rubinow, Isaac M., Secretary, Independent Order of B'nai B'rith, 40 Electric Bldg., Cincinnati, O.
†	Scheitlin, E., Assistant Treasurer, Globe Indemnity Co., 150 William St., New York.
†	Senior, Leon S., General Manager, Compensation Insurance Rating Board, 370 Seventh Ave., New York.
*Nov. 13, 1931	Silverman, David, Office of Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.
*Nov. 19, 1929	Skelding, Albert Z., Assistant Actuary, National Council on Compensation Insurance, 151 Fifth Ave., New York.
*Nov. 19, 1929	Skillings, Edward S., Associate Actuary, Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.

FELLOWS

Date Admitted	
Apr. 20, 1917	Smith, Charles G., Manager, State Insurance Fund, 625 Madison Ave., New York.
Nov. 18, 1927	Stone, Edward C., U. S. Manager, Employers' Liability Assurance Corporation, Limited, and President, American Employers' Insurance Company, 110 Milk St., Boston, Mass.
Feb. 25, 1916	Strong, Wendell M., Associate Actuary, Mutual Life Insurance Co., 32 Nassau St., New York.
Oct. 22, 1915	Strong, William Richard, No. 4 "Sheringham," Cotham Road, Kew, Victoria, Australia.
†	Sullivan, Robert J., Vice-President, The Travelers Insurance Co., and The Travelers Indemnity Co., 700 Main St., Hartford, Conn.
*Nov. 17, 1920	Tarbell, Thomas F., Actuary, Casualty Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Thompson, John S., Vice-President and Mathematician, Mutual Benefit Life Insurance Co., 300 Broadway, Newark, N. J.
Nov. 18, 1921	Toja, Guido, Director General, Institute Nazionale Delle Assicurazioni, Rome, Italy.
†	Train, John L., Secretary and General Manager, Utica Mutual Insurance Co., 185 Genesee St., Utica, N. Y.
Nov. 17, 1922	Traversi, Antonio T., Consulting Actuary and Accountant, Barrack House, 16 Barrack St., Sydney, Australia.
*Nov. 23, 1928	Valerius, N. M., Accident & Liability Department, Aetna Life Insurance Co., Hartford, Conn.
*Nov. 21, 1919	Van Tuyl, Hiram O., Actuary and Assistant Secretary, Constitution Indemnity Company of Philadelphia, Independence Building, 401 Walnut St., Philadelphia, Pa.
*Nov. 17, 1920	Waite, Alan W., Chief Underwriter, Accident and Liability Department, Aetna Life Insurance Co., Hartford, Conn.
*Nov. 18, 1925	Warren, Lloyd A. H., Professor of Mathematics, University of Manitoba, 64 Niagara St., Winnipeg, Manitoba, Canada.
May 23, 1919	Welch, Archibald, A., President, Phoenix Mutual Life Insurance Co., Hartford, Conn.
Nov. 19, 1926	Wheeler, Roy A., Vice-President and Actuary, Liberty Mutual Insurance Co., Park Square Building, Boston, Mass.
†	Whitney, Albert W., Associate General Manager, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York.
*Nov. 13, 1931	Wittick, Herbert E., Assistant Secretary, Pilot Insurance Co., 159 Bay St., Toronto, Canada.
†	Wolfe, Lee J., Consulting Actuary, 116 John St., New York.
May 24, 1921	Wood, Arthur B., Vice-President and Managing Director, Sun Life Assurance Company of Canada, Montreal, Canada.
*Nov. 17, 1920	Young, Charles N., 229 East Benedict Ave., Upper Darby, Pa.

ASSOCIATES

Those marked (*) have been enrolled as Associates upon examination by the Society.

Those marked (1) or (2) have passed Part I or Part II of the Fellowship Examination.

Date Enrolled	
May 23, 1924	Acker, Milton, Manager, Compensation and Liability Department, National Bureau of Casualty and Surety Underwriters, 1 Park Ave., New York.
*Nov. 15, 1918	Ackerman, Saul B., Associate Professor of Insurance, New York University, 90 Trinity Place, New York.
April 5, 1928	Allen, Austin F., Vice-President, Texas Employers Insurance Association and Employers Casualty Co., Dallas, Texas.
*Nov. 15, 1918	Ankers, Robert E., Secretary and Treasurer, Continental Life Insurance Co., District National Bank Building, Washington, D. C.
(1)*Nov.21,1930	Archibald, A. Edward, Associate Actuary, Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.
(1)*Nov.17,1922	Barter, John L., Superintendent, Liability Department, Pacific Department, Hartford Accident & Indemnity Co., 720 California St., San Francisco, Calif.
(1)*Nov.23,1928	Bateman, Arthur E., Liberty Mutual Insurance Company, Park Square Building, Boston, Mass.
*Nov. 18, 1925	Bittel, W. Harold, Peoria Life Insurance Co., 410 Main St., Peoria, Ill.
Nov. 17, 1920	Black, Nellas C., Superintendent Statistical Division, Maryland Casualty Co., Baltimore, Md.
*Nov. 23, 1928	Bower, Perry S., Great West Life Assurance Company, Winnipeg, Manitoba, Canada.
Nov. 15, 1918	Brooks, LeRoy, Statistician, U. S. Fidelity & Guaranty Co., Baltimore, Md.
Nov. 20, 1924	Broughton, Thomas W., General Superintendent, Zurich General Accident and Liability Insurance Co., Eastern Department, 80 John Street, New York.
*Nov. 15, 1918	Brunnquell, Helmuth G., Assistant Actuary, The Northwestern Mutual Life Insurance Co., Milwaukee, Wis.
*Oct. 22, 1915	Buffler, Louis, District Manager, Utica Mutual Insurance Co., 907 Chrysler Building, New York.
*Nov. 20, 1924	Bugbee, James M., Maryland Casualty Co., Baltimore, Md.
*Nov. 13, 1931	Burhans, Charles H., Standard Accident Insurance Co., 640 Temple Ave., Detroit, Mich.
March 31, 1920	Burt, Margaret A., Office of George B. Buck, Consulting Actuary, 150 Nassau St., New York.
*Nov. 13, 1931	Cameron, Freeland R., American Surety Co., 100 Broadway, New York.
Nov. 17, 1922	Cavanaugh, Leo D., Vice-President and Actuary, Federal Life Insurance Co., 166 N. Michigan Blvd., Chicago, Ill.

ASSOCIATES

Date Enrolled	
*Nov. 18, 1927	Chen, S. T., Actuarial Department, China United Assurance Society, 34 Bubbling Road, Shanghai, China.
*Nov. 18, 1927	Conrod, Stuart F., Actuary, Western Empire Life Insurance Co., Somerset Block, Winnipeg, Canada.
*Nov. 18, 1921	Constable, William J., Resident Secretary, Lumbermen's Mutual Casualty Co., 260 Tremont St., Boston, Mass.
May 23, 1929	Cowee, George A., Vice-President, Liberty Mutual Insurance Co., Park Square Building, Boston, Mass.
(1) *Nov.19,1926	Davies, E. Alfred, Budget Supervisor, Liberty Mutual Insurance Co., Park Square Building, Boston, Mass.
*Nov. 18, 1925	Davis, Malvin E., Assistant Actuary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
May 25, 1923	Economidy, Harilaus E., Treasurer, American Indemnity Co., Texas Indemnity Insurance Co., Galveston, Texas.
(1) *Nov.13,1931	Edwards, John, Inspector, Ontario Insurance Department, 91 Arundel Avenue, Toronto 6, Ontario, Canada.
June 5, 1925	Eger, Frank A., Comptroller, Insurance Company of North America and Affiliated Companies, 1600 Arch St., Philadelphia, Pa.
*Nov. 23, 1928	Faith, Edward L., Missouri State Life Insurance Co., 1501 Locust St., St. Louis, Mo.
*Nov. 16, 1923	Fitz, L. Leroy, 33 Walton Park, Melrose Highlands, Mass.
(1) *Nov.18,1927	Fitzgerald, A. H., Assistant Actuary, The Prudential Insurance Company of America, Newark, N. J.
*Nov. 16, 1923	Fleming, Frank A., Actuary, American Mutual Alliance, 60 East 42nd St., New York.
Nov. 20, 1924	Froberg, John, Superintendent, California Inspection Rating Bureau, 216 Pine St., San Francisco, Calif.
(1) *Nov.19,1926	Fuller, Gardner V., Assistant Secretary, National Council on Compensation Insurance, 151 Fifth Ave., New York.
(1) *Nov.19,1929	Furnivall, Maurice L., Assistant Actuary, Accident Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
March 21, 1930	Gallon, Richard W., Vice-President, New Amsterdam Casualty Co., 227 St. Paul St., Baltimore, Md.
(1) *Nov.13,1931	Garwood, Morrie L., Kemper Insurance Organization, Mutual Insurance Building, Chicago, Ill.
*Nov. 17, 1922	Gibson, Joseph P., Jr., General Manager, Excess Underwriters, Inc., 75 Fulton St., New York.
*Nov. 16, 1923	Gildea, James F., The Travelers Insurance Co., 700 Main St., Hartford, Conn.
Nov. 19, 1929	Gordon, Harold R., Executive Secretary, Health & Accident Underwriters Conference, 176 West Adams St., Chicago, Ill.
*Nov. 18, 1927	Green, Walter C., Office of Coates and Herfurth, Consulting Actuaries, 114 Sansome St., San Francisco, Calif.
*Nov. 18, 1921	Haggard, Robert E., Superintendent, Permanent Disability Rating Department, Industrial Accident Commission, State Building, San Francisco, Calif.

ASSOCIATES

Date Enrolled	
*Nov. 17, 1922	Hall, Hartwell L., Assistant Actuary, Connecticut Insurance Department, Hartford, Conn.
(2) *Nov.18,1925	Hall, William D., Managing Underwriters Corp., 1130 Penobscot Bldg., Detroit, Mich.
(1) *Mar.25,1924	Hart, Ward Van Buren, Assistant Actuary, Connecticut General Life Insurance Co., Hartford, Conn.
Nov. 21, 1919	Haydon, George F., General Manager, Wisconsin Compensation Rating & Inspection Bureau, 312 East Wisconsin Ave., Milwaukee, Wis.
Nov. 17, 1927	Hipp, Grady H., Actuary, State Insurance Fund, 625 Madison Ave., New York.
*Oct. 31, 1917	Jackson, Edward T., Statistician, General Accident Fire & Life Assurance Corporation, 421 Walnut St., Philadelphia, Pa.
Nov. 19, 1929	Jacobs, Carl N., President, Hardware Mutual Casualty Co., Stevens Point, Wis.
(1) *Nov.18,1927	Jamison, Dorothy M., Assistant Actuary, George Washington Life Insurance Co., 1014 Kanawha St., Charleston, W. Va.
(2) *Nov.18,1921	Jensen, Edward S., Actuary, Great Republic Life Insurance Co., 8th and Spring Sts., Los Angeles, Calif.
Nov. 21, 1930	Jones, H. Lloyd, Comptroller, London Guarantee & Accident Co., 55 Fifth Ave., New York.
*Nov. 21, 1919	Jones, Loring D., Assistant Manager, State Insurance Fund, 625 Madison Ave., New York.
*Nov. 17, 1922	Kirk, Carl L., Actuary, Zurich General Accident & Liability Insurance Co., 431 Insurance Exchange, Chicago, Ill.
*Nov. 19, 1926	Kormes, Mark, Assistant Actuary, Compensation Insurance Rating Board, 370 Seventh Ave., New York.
May 9, 1930	Lange, John R., Chief Actuary, Wisconsin Insurance Department, Madison, Wis.
*Nov. 23, 1928	Lipkind, Saul S., Reliance Life Insurance Company, Pittsburgh, Pa.
(1) *Nov.13,1931	Lyons, Daniel J., Assistant Actuary, Columbian National Life Insurance Co., 77 Franklin St., Boston, Mass.
(1) *Nov.13,1931	MacKeen, Harold E., The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 18, 1925	Malmuth, Jacob, Examiner, New York Insurance Department, 80 Centre St., New York.
Mar. 24, 1927	Marsh, Charles V. R., Comptroller and Assistant Treasurer, Fidelity & Deposit Co. and American Bonding Co., Baltimore, Md.
(1) *Oct. 27, 1916	McClure, Laurence H., Assistant Sales Manager, Electrical Division, Colt's Patent Fire Arms Manufacturing Co., Hartford, Conn.
*Nov. 17, 1922	McIver, Rosswell A., Actuary, Washington National Insurance Co., 1737 Howard St., Chicago, Ill.
(1) *Nov.17,1922	Michener, Samuel M., Assistant Actuary, Columbus Mutual Life Insurance Co., 580 East Broad St., Columbus, Ohio.
(1) *Nov.13,1931	Miller, Henry C., Comptroller, State Compensation Insurance Fund, Civic Centre, San Francisco, Calif.
(1) *Nov.21,1930	Miller, John H., Associate Actuary, Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.

ASSOCIATES

Date Enrolled	
*Nov. 19, 1926	Milne, John L., Actuary, Presbyterian Ministers' Fund for Life Insurance, 1805-7 Walnut St., Philadelphia, Pa.
Nov. 17, 1922	Montgomery, John C., Secretary and Assistant Treasurer, Bankers Indemnity Insurance Co., 31 Clinton St., Newark, N. J.
May 25, 1923	Moore, Joseph P., President, North American Accident Insurance Co., 275 Craig St., W., Montreal, Canada.
(2) *Nov.21,1919	Mothersill, Roland V., Secretary, Anchor Casualty Co., Anchor Insurance Building. St. Paul, Minn.
*Nov. 19, 1929	Muller, Fritz, Secretary-Treasurer, Agrippina Life Insurance Stock Co., Berlin, W. 30 Motzstr. 3, Germany.
(1) *Oct. 27,1916	Newell, William, Assistant Secretary, Sun Indemnity Co., 55 Fifth Ave., New York.
*Nov. 23, 1928	Newhall, Karl, Group Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 18, 1925	Nicholson, Earl H., 731 College Ave., S. E., Grand Rapids, Mich.
*Nov. 13, 1931	Oberhaus, Thomas M., Office of Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.
May 23, 1919	Otto, Walter E., Secretary and Treasurer, Michigan Mutual Liability Co., 1209 Washington Blvd., Detroit, Mich.
*Nov. 19, 1926	Overholser, Donald M., 803 East 35th St., Brooklyn, N. Y.
Nov. 20, 1924	Pennock, Richard M., Actuary, Pennsylvania Manufacturers Association Casualty Insurance Co., Finance Building, Philadelphia, Pa.
Nov. 19, 1929	Phillips, John H., Secretary-Actuary, Minnesota Compensation Insurance Board, State Capitol, St. Paul, Minn.
(1) *Nov.13,1931	Pickett, Samuel C., Assistant Actuary, Connecticut Insurance Department, Hartford, Conn.
*Nov. 17, 1920	Pike, Morris, Vice-President and Actuary, Union Labor Life Insurance Co., Machinists Building, Mount Vernon Place, Washington, D. C.
Mar. 24, 1927	Piper, John W., Superintendent of Statistical Department, Hartford Accident & Indemnity Co., 690 Asylum Ave., Hartford, Conn.
(1) *Nov.23,1928	Piper, Kenneth B., Associate Actuary, Woodward, Fondiller & Ryan, Consulting Actuaries, 90 John St., New York.
*Nov. 18, 1927	Poissant, William A., The Travelers Insurance Co., 700 Main Street, Hartford, Conn.
(1) *Nov.17,1922	Poorman, William F., Actuary, Central Life Assurance Society, Fifth and Grand Aves., Des Moines, Iowa.
(1) Nov. 17, 1922	Powell, John M., President, The Loyal Protective Insurance Co., 38 Newberry St., Boston, Mass.
*Nov. 18, 1925	Prenner, Myron R., Actuary, Department of Insurance, Bismarck, N. D.
*Nov. 15, 1918	Raywid, Joseph, President, Joseph Raywid & Co., Inc., 90 William St., New York.
Nov. 19, 1929	Richardson, Harry F., Secretary-Treasurer, National Council on Compensation Insurance, 151 Fifth Ave., New York.
*Nov. 21, 1919	Robbins, Rainard B., Secretary and Actuary for Annuities, Teachers Insurance and Annuity Association, 522 Fifth Ave., New York.
*Nov. 18, 1927	Sarason, Harry M., Missouri State Life Insurance Co., St. Louis, Mo.

ASSOCIATES

Date Enrolled	
Nov. 16, 1923	Sawyer, Arthur, Globe Indemnity Co., 150 William St., New York.
*Nov. 20, 1930	Sevilla, Exequiel S., Actuary, Office of The Insurance Commissioner, Manila, Philippine Islands.
(1)*Nov.20,1924	Sheppard, Norris E., Lecturer in Mathematics and Mechanics, University of Toronto, Toronto, Canada.
Nov. 15, 1918	Sibley, John L., Assistant Secretary, United States Casualty Co., 80 Maiden Lane, New York.
*Nov. 21, 1930	Sinnott, Robert V., Hartford Accident & Indemnity Co., 690 Asylum Ave., Hartford, Conn.
(1)*May 9, 1930	Smick, Jack J., National Council on Compensation Insurance, 151 Fifth Ave., New York.
*Nov. 18, 1921	Smith, Arthur G., Assistant General Manager and Actuary, Compensation Insurance Rating Board, 370 Seventh Ave., New York.
(1)*Nov.19,1926	Somerville, William F., St. Paul Mercury Indemnity Co., St. Paul, Minn.
*Nov. 18, 1925	Sommer, Armand, Manager, Accident and Health Department, Home Indemnity Company, 59 Maiden Lane, New York.
*Nov. 18, 1927	Speers, Alexander A., Actuary, Michigan Life Insurance Co., Detroit, Mich.
*Nov. 15, 1918	Spencer, Harold S., Aetna Life Insurance Co., Hartford, Conn.
Nov. 20, 1924	Stellwagen, Herbert P., Assistant Vice-President, Indemnity Insurance Company of North America, 1600 Arch Street, Philadelphia, Pa.
*Nov. 16, 1923	Stoke, Kendrick, Michigan Mutual Liability Insurance Co., 1209 Washington Blvd., Detroit, Mich.
*Nov. 21, 1930	Sullivan, Walter F., Associated Indemnity Corporation, 332 Pine St., San Francisco, Calif.
(1)*Nov.19,1929	Taheny, John J., Assistant Vice-President and Attorney, Associated Indemnity Corporation, 332 Pine St., San Francisco, Calif.
Mar. 23, 1921	Thompson, Arthur E., Chief Statistician, Globe Indemnity Co., 150 William St., New York.
(1)*Nov.21,1919	Trench, Frederick H., Manager, Underwriting Department, Utica Mutual Insurance Co., 185 Genesee St., Utica, N.Y.
(1)*Nov.20,1924	Uhl, M. Elizabeth, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York.
*Nov. 21, 1919	Voogt, Walter G., Treasurer, Associated Indemnity Corporation, 332 Pine St., San Francisco, Calif.
(1)*Oct. 27, 1916	Waite, Harry V., Statistician, The Travelers Fire Insurance Co., 700 Main St., Hartford, Conn.
May 23, 1919	Warren, Charles S., Secretary, Massachusetts Automobile Rating and Accident Prevention Bureau, 89 Broad St., Boston, Mass.
Nov. 18, 1925	Washburn, James H., Consulting Actuary, 2004 West End Ave., Nashville, Tenn.
(1)*Nov.18,1921	Waters, Leland L., Secretary-Treasurer, National Accident Insurance Co., Lincoln, Neb.
Nov. 17, 1920	Watson, J. J., Resident Vice-President, American Indemnity Co., and Texas Indemnity Insurance Co., 1307 Kirby Building, Dallas, Texas.

ASSOCIATES

Date Enrolled	
*Nov. 18, 1921	Welch, Eugene R., Associated Indemnity Corporation, 332 Pine St., San Francisco, Calif.
*Nov. 18, 1925	Wellman, Alexander C., Vice-President and Actuary, Protective Life Insurance Co., Birmingham, Ala.
(1)*Nov.21,1930	Wells, Walter I., Massachusetts Protective Association, Worcester, Mass.
Mar. 21, 1929	Wheeler, Charles A., Chief Examiner of Casualty Companies, New York Insurance Department, 80 Centre St., New York.
*Nov. 18, 1927	Whitbread, Frank G., Great West Life Assurance Co., Winnipeg, Manitoba, Canada.
Sept. 17, 1919	Williams, John F., Vice-President, Illinois Life Insurance Co., 1212 Lake Shore Drive, Chicago, Ill.
*Oct. 22, 1915	Williamson, William R., Assistant Actuary, Life Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Oct. 22, 1915	Wood, Donald M., Childs & Wood, General Agents, Royal Indemnity and Independence Indemnity Co., 175 W. Jackson Blvd., Chicago, Ill.
*Nov. 18, 1927	Wood, Milton J., Life Actuarial Department, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Oct. 22, 1915	Woodman, Charles E., Assistant Manager, Ocean Accident & Guarantee Corporation and Comptroller Columbia Casualty Co., 1 Park Ave., New York.
*Nov. 18, 1925	Woolery, James M., Assistant Actuary, Inter-Southern Life Insurance Co., Louisville, Ky.
*Nov. 17, 1922	Young, Floyd E., Assistant Secretary and Actuary, National Fidelity Life Insurance Co., National Fidelity Life Building, Kansas City, Mo.

SCHEDULE OF MEMBERSHIP, NOVEMBER 13, 1931

	Fellows	Associates	Total
Membership, November 21, 1930.....	175	129	304
Additions:			
By election.....	1	..	1
By examination.....	6	9	15
	182	138	320
Deductions:			
By death.....	3	1	4
By withdrawal.....	2	4	6
By transfers from Associate to Fellow.	..	6	6
Membership, November 13, 1931.....	177	127	304

EX-PRESIDENTS AND EX-VICE-PRESIDENTS

EX-PRESIDENTS

	Term
I. M. Rubinow	1914-1916
James D. Craig	1916-1918
*Joseph H. Woodward	1918-1919
Benedict D. Flynn	1919-1920
Albert H. Mowbray	1920-1922
*Harwood E. Ryan	1922-1923
William Leslie	1923-1924
G. F. Michelbacher	1924-1926
Sanford B. Perkins	1926-1928
George D. Moore	1928-1930

EX-VICE-PRESIDENTS

	Term
Leon S. Senior	1920-1922
Edmund E. Cammack	1922-1924
Ralph H. Blanchard	1924-1926
Sydney D. Pinney	1928-1930
Paul Dorweiler	1928-1930

*Deceased

DECEASED MEMBERS

All of the following were Fellows with the exception of those marked * who were Associates.

Date of Death	
Feb. 10, 1920	*Baxter, Don. A., Deputy Insurance Commissioner, Michigan Insurance Department, Lansing, Mich.
Feb. 4, 1920	Case, Gordon, Office of F. J. Haight, Consulting Actuary, Indianapolis, Ind.
July 23, 1921	Conway, Charles T., Vice-President, Liberty Mutual Insurance Co., Boston, Mass.
Jan. 20, 1922	Craig, James McIntosh, Actuary, Metropolitan Life Insurance Co., New York.
Sept. 2, 1921	Crum, Frederick S., Assistant Statistician, Prudential Insurance Co., Newark, N. J.
June 21, 1931	Dawson, Alfred Burnett, Consulting Actuary, New York.
Jan. 18, 1929	Deutschberger, Samuel, Actuary, New York Insurance Department, New York.
July 9, 1922	Downey, Ezekiel Hinton, Compensation Actuary, Pennsylvania Insurance Department, Harrisburg, Pa.
Oct. 30, 1924	Fackler, David Parks, Consulting Actuary, New York.
July 25, 1931	Frankel, Lee K., Second Vice-President, Metropolitan Life Insurance Co., New York.
Aug. 22, 1925	Gaty, Theodore E., Vice-President and Secretary, Fidelity & Casualty Co., New York.
Mar. 8, 1931	*Hall, Leslie Le Vant, Secretary-Treasurer, National Bureau of Casualty & Surety Underwriters, New York.
Mar. 10, 1924	Hookstadt, Carl, Expert, U. S. Bureau of Labor Statistics, Washington, D. C.
Feb. 11, 1928	Kearney, Thomas P., Manager, State Compensation Insurance Fund, Denver, Col.
Oct. 15, 1918	Kime, Virgil Morrison, Actuary, Casualty Departments, The Travelers Insurance Co., Hartford, Conn.
Dec. 9, 1927	Landis, Abb, Consulting Actuary, Nashville, Tenn.
Dec. 20, 1920	*Lubin, Harry, Assistant Actuary, State Industrial Commission, New York.
Mar. 27, 1931	Meltzer, Marcus, Statistician, National Bureau of Casualty & Surety Underwriters, New York.
Aug. 20, 1915	Montgomery, William J., State Actuary, Boston, Mass.
Dec. 19, 1929	Morris, Edward Bontecou, Actuary, Life Department, The Travelers Insurance Co., Hartford, Conn.
July 24, 1915	Phelps, Edward B., Editor, The American Underwriter, New York.
July 30, 1921	Reiter, Charles Grant, Assistant Actuary, Metropolitan Life Insurance Co., New York.
Nov. 2, 1930	Ryan, Harwood Eldridge, Consulting Actuary, New York.
Feb. 26, 1921	Saxton, Arthur F., Chief Examiner of Casualty Companies, New York Insurance Department, New York.
May 9, 1920	Stone, John T., President, Maryland Casualty Co., Baltimore, Md.
June 11, 1930	*Wilkinson, Albert Edward, Actuary, Standard Accident Insurance Co., Detroit, Mich.
Dec. 31, 1927	Wolfe, S. Herbert, Consulting Actuary, New York.
May 15, 1928	Woodward, Joseph H., Consulting Actuary, New York.
Oct. 23, 1927	Young, William, Actuary, New York Life Insurance Co., New York.

STUDENTS

Part I and Part II Passed

The following candidates have been successful in completing the examinations for Associate but have not yet been enrolled as Associates of the Society by reason of the terms of examination rule 4 which reads: "Upon the candidate having passed both Parts I and II he will be enrolled as an Associate, provided he presents evidence of at least one year experience in actuarial, accounting or statistical work in casualty insurance offices or in the teaching of casualty insurance science at a recognized college or university, or other evidence of his knowledge of actuarial, accounting or statistical work as is satisfactory to the Council." Upon the completion of the requirements of the Council in respect to each of these candidates they will be enrolled as Associates:

ARTHUR, CHARLES R., Manufacturers Life Insurance Company, 100 Bloor St., E., Toronto, Canada.

BAKER, ROBERT W., 400 Assiniborni Ave., Winnipeg, Manitoba, Canada.

BATHO, BRUCE, The Franklin Life Insurance Company, Springfield, Ill.

BRERETON, C. R., Dept. of Insurance, Ottawa, Ontario, Canada.

CHODORCOFF, WILLIAM, Prudential Insurance Company, Newark, N. J.

CRIMMINS, JOSEPH, Metropolitan Life Insurance Company, 1 Madison Ave., New York.

FELDMAN, ISRAEL, Metropolitan Life Insurance Company, Ottawa, Ontario, Canada.

FOOTE, JEAN VIVIAN, Sparling Hall, Wesley College, Winnipeg, Manitoba, Canada.

GETMAN, RICHARD A., The Travelers Insurance Company, Hartford, Conn.

GODDARD, DAVID G., The Travelers Insurance Company, Hartford, Conn.

HIBBARD, DONALD L., One Shaler Lane, Cambrid ge, Mass.

JONES, CHARLES H., Metropolitan Life Insurance Company, 1 Madison Ave., New York.

KWASHA, HERMAN, The Travelers Insurance Company, Hartford, Conn.

LAING, CHARLES B., Prudential Insurance Company, Newark, N. J.

LAIRD, W. DARRELL, 345 Waterloo St., Winnipeg, Manitoba, Canada.

LEARSON, RICHARD J., John Hancock Mutual Life Insurance Co., 197 Clarendon St., Boston, Mass.

LEHANE, LEO J., Central Life Insurance Company, Chicago, Ill.

LEWIS, BARNET, 372 St. John's Ave., Winnipeg, Manitoba, Canada.

LOADMAN, ARTHUR E., 665 Elgin Ave., Winnipeg, Manitoba, Canada.

MOORE, HAROLD P. H., 720 West End Ave., New York City.

MUTH, A. F., Actuarial Department, London Life Insurance Company, London, Canada.

ORLOFF, CONRAD, Business Men's Assurance Company, Kansas City, Mo.

PRASOW, ROSE, Actuarial Department, Confederation Life Association, Toronto, Ontario, Canada.

ROBERTS, JAMES A., The Travelers Insurance Company, Hartford, Conn.

ROBERTSON, ARTHUR G., 145 Spruce St., Winnipeg, Manitoba, Canada.

ROOD, HENRY F., The Travelers Insurance Company, Hartford, Conn.

SCHWARTZ, RICHARD T., Actuarial Department, New York Life Insurance Co., 51 Madison Ave., New York.

SHPELLER, S. I., 791 Selkirk Ave., Winnipeg, Manitoba, Canada.

SUTHERLAND, HENRY M., Actuarial Department, Sun Life Assurance Company, Montreal, Canada.

THOMPSON, EMERSON W., The Travelers Insurance Company, Hartford, Conn.

WALL, DEAN, Actuarial Department, Missouri State Life Insurance Company, St. Louis, Mo.

WARD, ROBERT G., Columbian National Life Insurance Co., Boston, Mass.

WILSON, JOHN F., Manufacturers Life Insurance Company, Toronto, Ontario, Canada.

YATES, J. ARNOLD, The Travelers Insurance Company, Hartford, Conn.

The following candidates for the grade of Associate have passed one of the two parts of the examination, during the last three years:

Part I only

BARRON, JAMES, JR., General Reinsurance Corporation, 90 John St., New York.

BERKELEY, ERNEST T., Employers Liability Assurance Corp., 110 Milk St., Boston, Mass.

DAVIS, MARJORIE, Constitution Indemnity Company, Philadelphia, Pa.

DRUCKER, ABRAHAM, 303 West 42nd St., New York.

DUNBAR, WILLIAM A., General Reinsurance Corporation, 90 John St., New York.

FOREST, JOSEPH H., Liberty Mutual Insurance Company, Park Square Bldg., Boston, Mass.

GATELY, JOHN J., General Reinsurance Corporation, 90 John St., New York.

HART, AGNES S., 448 Rosedale Ave., Winnipeg, Manitoba, Canada.

ISAAC, WILLIAM J., Northwestern National Life Insurance Company, 430 Oak St., Minneapolis, Minn.

MILLS, JOHN A., Chief Statistician, (American) Lumbermen's Mutual Casualty Company, Mutual Insurance Bldg., Chicago, Ill.

WOODWARD, BARBARA H., National Bureau of Casualty and Surety Underwriters, One Park Ave., New York City.

YOUNT, HUBERT W., Liberty Mutual Insurance Company, Park Square Bldg., Boston, Mass.

Part II only

BERMAN, ALFRED, 270 Atlantic Ave., Winnipeg, Manitoba, Canada.

BOLTON, ARTHUR L., JR., "Shotover Furze", The Ridings, Headington, Oxford, England.

CAMPBELL, KENNETH M., Actuarial Department, The Imperial Life Assurance Co., 20 Victoria St., Toronto, Ontario, Canada.

CHESTER, GEORGE D., The Travelers Insurance Company, Hartford, Conn.

DIGIULIO, LOUIS, The Travelers Insurance Company, Hartford, Conn.

GODFREY, CLIFFORD T., 399 Harbison Ave., Winnipeg, Manitoba, Canada.

GUTHRIE, JOHN A., Ontario Equitable Life & Accident Insurance Co., Waterloo, Ontario, Canada.

CONSTITUTION

(As Amended November 23, 1928)

Article I.—*Name.*

This organization shall be called the Casualty Actuarial Society.

Article II.—*Object.*

The object of the Society shall be the promotion of actuarial and statistical science as applied to the problems of casualty and social insurance by means of personal intercourse, the presentation and discussion of appropriate papers, the collection of a library and such other means as may be found desirable.

The Society shall take no partisan attitude, by resolution or otherwise, upon any question relating to casualty or social insurance.

Article III.—*Membership.*

The membership of the Society shall be composed of two classes, Fellows and Associates. Fellows only shall be eligible to office or have the right to vote.

The Fellows of the Society shall be the present members and those who may be duly admitted to Fellowship as hereinafter provided. Any Associate of the Society may apply to the Council for admission to Fellowship. If the application shall be approved by the Council with not more than three negative votes the Associate shall become a Fellow on passing such final examination as the Council may prescribe. Otherwise no one shall be admitted as a Fellow unless recommended by a duly called meeting of the Council with not more than three negative votes followed by a three-fourths ballot of the Fellows present and voting at a meeting of the Society.

Any person may, upon nomination to the Council by two Fellows of the Society and approval by the Council of such nomination with not more than one negative vote, become enrolled as an Associate of the Society, provided that he shall pass such examination as the Council may prescribe. Such examination may be waived in the case of a candidate who for a period of not less than two years has been in responsible charge of the statistical or actuarial department of a casualty insurance organization or has had such other practical experience in casualty or social insurance as in the opinion of the Council renders him qualified for Associateship.

Article IV.—*Officers and Council.*

The officers of the Society shall be a President, two Vice-Presidents, a Secretary-Treasurer, an Editor, and a Librarian. The Council shall be composed of the active officers, nine other Fellows and, during the four years following the expiration of their terms of office, the ex-Presidents and ex-Vice-Presidents. The Council shall fill vacancies occasioned by death or resignation of any officer or other member of the Council, such appointees to serve until the next annual meeting of the Society.

CONSTITUTION

ARTICLE V.—*Election of Officers and Council.*

The President, Vice-Presidents, and the Secretary-Treasurer shall be elected by a majority ballot at the annual meeting for the term of one year and three members of the Council shall, in a similar manner, be annually elected to serve for three years. The President and Vice-Presidents shall not be eligible for the same office for more than two consecutive years nor shall any retiring member of the Council be eligible for re-election at the same meeting.

The Editor and the Librarian shall be elected annually by the Council at the Council meeting preceding the annual meeting of the Society. They shall be subject to confirmation by majority ballot of the Society at the annual meeting.

The terms of the officers shall begin at the close of the meeting at which they are elected except that the retiring Editor shall retain the powers and duties of office so long as may be necessary to complete the then current issue of *Proceedings*.

ARTICLE VI.—*Duties of Officers and Council.*

The duties of the officers shall be such as usually appertain to their respective offices or may be specified in the by-laws. The duties of the Council shall be to pass upon candidates for membership, to decide upon papers offered for reading at the meetings, to supervise the examination of candidates and prescribe fees therefor, to call meetings, and, in general, through the appointment of committees and otherwise, to manage the affairs of the Society.

ARTICLE VII.—*Meetings.*

There shall be an annual meeting of the Society on such date in the month of November as may be fixed by the Council in each year, but other meetings may be called by the Council from time to time and shall be called by the President at any time upon the written request of ten Fellows. At least two weeks' notice of all meetings shall be given by the Secretary.

ARTICLE VIII.—*Quorum.*

Seven members of the Council shall constitute a quorum. Twenty Fellows of the Society shall constitute a quorum.

ARTICLE IX.—*Expulsion or Suspension of Members.*

Except for non-payment of dues no member of the Society shall be expelled or suspended save upon action by the Council with not more than three negative votes followed by a three-fourths ballot of the Fellows present and voting at a meeting of the Society.

ARTICLE X.—*Amendments.*

This constitution may be amended by an affirmative vote of two-thirds of the Fellows present at any meeting held at least one month after notice of such proposed amendment shall have been sent to each Fellow by the Secretary.

BY-LAWS

(As Amended May 21, 1926)

Article I.—*Order of Business.*

At a meeting of the Society the following order of business shall be observed unless the Society votes otherwise for the time being:

1. Calling of the roll.
2. Address or remarks by the President.
3. Minutes of the last meeting.
4. Report by the Council on business transacted by it since the last meeting of the Society.
5. New membership.
6. Reports of officers and committees.
7. Election of officers and Council (at annual meetings only).
8. Unfinished business.
9. New business.
10. Reading of papers.
11. Discussion of papers.

Article II.—*Council Meetings.*

Meetings of the Council shall be called whenever the President or three members of the Council so request, but not without sending notice to each member of the Council seven or more days before the time appointed. Such notice shall state the objects intended to be brought before the meeting, and should other matter be passed upon, any member of the Council shall have the right to re-open the question at the next meeting.

Article III.—*Duties of Officers.*

The President, or, in his absence, one of the Vice-Presidents, shall preside at meetings of the Society and of the Council. At the Society meetings the presiding officer shall vote only in case of a tie, but at the Council meetings he may vote in all cases.

The Secretary-Treasurer shall keep a full and accurate record of the proceedings at the meetings of the Society and of the Council, send out calls for the said meetings, and, with the approval of the President and Council, carry on the correspondence of the Society. Subject to the direction of the Council, he shall have immediate charge of the office and archives of the Society.

The Secretary-Treasurer shall also send out calls for annual dues and acknowledge receipt of same; pay all bills approved by the President for expenditures authorized by the Council of the Society; keep a detailed account of all receipts and expenditures, and present an abstract of the same at the annual meetings, after it has been audited by a committee of the Council.

The Editor shall, under the general supervision of the Council, have charge of all matters connected with editing and printing the Society's publications. The *Proceedings* shall contain only the proceedings of the meetings, original papers or reviews written by members, discussions on said papers and other matter expressly authorized by the Council.

The Librarian shall, under the general supervision of the Council, have charge of the books, pamphlets, manuscripts and other literary or scientific material collected by the Society.

ARTICLE IV.—*Dues.*

The dues shall be ten dollars for Fellows payable upon entrance and at each annual meeting thereafter, except in the case of Fellows not residing in the United States, Canada, or Mexico, who shall pay five dollars at the time stated. The dues shall be five dollars for Associates payable upon entrance and each annual meeting thereafter until five such payments in all shall have been made; beginning with the sixth annual meeting after the admission of an Associate as such the dues of any Associate heretofore or hereafter admitted shall be the same as those of a Fellow. The payment of dues will be waived in the case of Fellows or Associates who have attained the age of seventy years.

It shall be the duty of the Secretary-Treasurer to notify by mail any Fellow or Associate whose dues may be six months in arrears, and to accompany such notice by a copy of this article. If such Fellow or Associate shall fail to pay his dues within three months from the date of mailing such notice, his name shall be stricken from the rolls, and he shall thereupon cease to be a Fellow or Associate of the Society. He may, however, be reinstated by vote of the Council, and upon payment of arrears of dues.

ARTICLE V.—*Designation by Initials.*

Fellows of the Society are authorized to append to their names the initials F. C. A. S.; and Associates are authorized to append to their names the initials A. C. A. S.

ARTICLE VI.—*Amendments.*

These by-laws may be amended by an affirmative vote of two-thirds of the Fellows present at any meeting held at least one month after notice of the proposed amendment shall have been sent to each Fellow by the Secretary.

SYLLABUS OF EXAMINATIONS

SUBJECTS

ASSOCIATESHIP: (*Part I: Sections 1 to 4; Part II: Sections 5 to 8*)

Section 1. *Advanced algebra*

Section 2. *Compound interest and annuities certain*

Section 3. *Descriptive and analytical statistics*

Section 4. *Elements of accounting, including double-entry bookkeeping*

Section 5. *Finite differences*

Section 6. *Differential and integral calculus*

Section 7. *Probabilities*

Section 8. *Elements of the theory of life contingencies; life annuities; life assurances*

FELLOWSHIP: (*Part I: Sections 9 to 12; Part II: Sections 13 to 16*)

Section 9. *Policy forms and underwriting practice in casualty insurance*

Section 10. *Investments of insurance companies*

Section 11. *Insurance law and legislation*

Section 12. *Economics of insurance*

Section 13. *Calculation of premiums and reserves for casualty (including social) insurance*

Section 14. *Advanced practical problems in casualty (including social) insurance statistics*

Section 15. *Advanced problems and practical methods of casualty insurance accounting*

Section 16. *Advanced problems in underwriting, administrative and service elements of casualty (including social) insurance*

To assist students in preparation for the examinations, Recommendations for Study have been prepared. This lists the texts, readings and technical material which must be mastered by the candidates. Textbooks are loaned to candidates by the Society.

RULES REGARDING EXAMINATIONS FOR ADMISSION TO THE SOCIETY

(As Amended November 13, 1931)

The Council adopted the following rules providing for the examination system of the Society:

1. Examinations will be held on the last Wednesday and Thursday during the month of May in each year in such cities as will be convenient for three or more candidates.

2. Application for admission to examination should be made on the Society's blank form, which may be obtained from the Secretary-Treasurer. No applications will be considered unless received before the fifteenth day of March preceding the dates of examination.

3. A fee of $5.00 will be charged for admission to examination. This fee is the same whether the candidate sits for one or two parts and is payable for each year in which the candidate presents himself. Examination fees are payable to the Secretary-Treasurer and must be in his hands before the fifteenth day of March preceding the dates of examination.

4. The examination for Associateship consists of two parts. No candidate will be permitted to present himself for Part II unless he has previously passed in Part I or takes Parts I and II in the same year. If a candidate takes both parts in the same year and passes in one and fails in the other, he will be given credit for the part passed. Upon the candidate having passed both Parts I and II he will be enrolled as an Associate, provided he presents evidence of at least one year experience in actuarial, accounting or statistical work in casualty insurance offices or in the teaching of casualty insurance science at a recognized college or university, or other evidence of his knowledge of actuarial, accounting or statistical work as is satisfactory to the Council.*

* Candidates who have had no insurance experience, or whose experience is limited exclusively to life insurance companies, or who have not had one year of casualty insurance experience, will not be enrolled as Associates after passing Parts I and II, until they have had one year of casualty insurance experience; however, candidates not having one year of casualty insurance experience may, in accordance with a ruling of the Committee on Admissions, be enrolled as Associates upon passing the examination for Fellowship Part I.

5. In the case of applicants in the following classes, the Council may, upon receipt of satisfactory evidence that applicants are within the terms of this rule, waive the passing of both Parts I and II of the Associateship Examination. Such applicants may become Associates upon passing Part I of the Fellowship Examination, and may be admitted as Fellows by examination, provided they subsequently pass Part II of the Fellowship Examination.

(a) Casualty insurance men not less than thirty years of age who have been in the business a number of years and who occupy executive positions.

(b) Fellows and Associates by examination of the Actuarial Society of America or of the American Institute of Actuaries.

6. The examination for Fellowship is divided into two parts. No candidate will be permitted to present himself for Part II unless he has previously passed in Part I or takes Parts I and II in the same year. If a candidate takes both parts in the same year and passes in one and fails in the other, he will be given credit for the part passed.

7. As an alternative to the passing of Part II of the Fellowship examination, a candidate may elect to present an original thesis on an approved subject relating to casualty or social insurance. Candidates electing this alternative should communicate with the Secretary-Treasurer as to the approval of the subject chosen. All theses must be in the hands of the Secretary-Treasurer before the last Thursday in May of the year in which they are to be considered. Where Part I of the Fellowship examination is not taken during the same year, no examination fee will be required in connection with the presentation of a thesis. All theses submitted are, if accepted, to be the property of the Society and may, with the approval of the Council, be printed in the *Proceedings*.

1931 EXAMINATIONS OF THE SOCIETY

MAY 27 AND 28, 1931

EXAMINATION FOR ADMISSION AS ASSOCIATE

PART I

1. (a) There are fifteen letters of which five are A, four are B, three are C and three are D. In how many ways can an arrangement of five letters be made?

   (b) In how many ways can two booksellers divide between them 3 copies of one book, 8 copies of another and 10 copies of another? Either man can take any number of books, but may not take none or all.

2. (a) Find by the binomial theorem $\sqrt[10]{896}$ correct to 4 decimal places.

   (b) Solve
   $$\begin{aligned} x - y &= 2 \\ xz - yw &= 3 \\ xz^2 - yw^2 &= 5 \\ xz^3 - yw^3 &= 9 \end{aligned}$$

3. (a) If the equation $x^2 - 15 - m(2x - 8) = 0$ has equal roots, find the value of m.

   (b) Find the value of the repeating decimal $.4\dot{2}\dot{3}$.

4. (a) In England the population increased 15.9% between 1871 and 1881; if the town population increased 18% and the country population 4%, find the ratio of the town population to the country population in 1871.

   (b) Find the middle term of $(x - \sqrt{y})^{14}$.

5. A loan of \$40,000 was made 1/1/26 repayable in 25 years by half yearly annuity payments on the basis of interest at the rate of 5% per annum convertible quarterly. On 1/1/31 an additional repayment of \$10,000.00 was made with the regular payment then due. Calculate the new annuity payment commencing 7/1/31 assuming that the term is to remain unaltered, and draw up a schedule for the first four new payments showing the amount of principal and interest in each payment and the principal outstanding at each half year.
   Given $a_{\overline{50}|}=28.262312$, $a_{\overline{40}|}=25.102775$, $a_{\overline{36}|}=23.556251$ at $2\frac{1}{2}\%$.

6. (a) Define nominal rate of interest.
   Define effective rate of interest.
   Define force of interest.
   (b) Derive an expression for determining the nominal rate of interest when the principal, the compound amount and the time are given, interest convertible m times a year.

7. A loan of \$20,000 is to be repaid in about 40 years by equal half yearly payments of \$583, the first to be paid at the end of the first half year. Interest is charged at the rate of 5% per annum payable half yearly on the outstanding balance of the loan. After 10 years the borrower desires to accelerate repayment by making additional repayments of principal at the end of each year so that the loan is completely repaid by the end of the 20th year, equal amounts of principal being repaid annually. What will be the amounts (to the nearest dollar) of additional payments to be made at the end of the 15th and 20th years?
   Given $(1+i)^{20}=1.638616$ at $2\frac{1}{2}\%$.

8. Find the purchase price of a bond for \$100 with dividend rate at 6% nominal payable January 1 and July 1 and redeemable after 10 years at par to yield 5% nominal, convertible semi-annually.
   Given $a_{\overline{20}|}$ at $2.5\% = 15.58916$.

9. Derive the formula for the amount of an annuity of 1 per annum payable p times a year for n years.

10. Determine from the following data the approximate value of the median, mean, mode, upper and lower quartiles, and standard deviation.

Value	*Frequency*
0 – 1	11
1 – 2	17
2 – 3	26
3 – 4	38
4 – 5	56
5 – 6	83
6 – 7	120
7 – 8	163
8 – 9	196
9 – 10	181
10 – 11	93
11 – 12	16
	Total frequency 1000

11. What is meant by the term "correlation"?
Do the following statistics indicate a high or low correlation? Compute the Pearsonian coefficient of correlation.

x	0	1	2	3	4	5	6	7	8	9	10
y	19.8	19.2	17.3	15.7	15.4	13.4	12.9	11.7	10.0	8.6	7.8

12. From the following data, compute the coefficient of variability.

Class	*Frequency*
0 – 4	5
5 – 9	20
10 – 14	45
15 – 19	22
20 – 24	8

13. (a) Define three averages commonly used in statistics and indicate the advantages and disadvantages of each.

(b) Define skewness, probable error, coefficient of dispersion, regression lines.

14. On January 6th a company's balance sheet as of the preceding December 31st has just been made up and is

Assets		*Liabilities*	
Cash	$ 5,000	Accounts Payable	$15,000
Book Balance	15,000	Capital	100,000
Stock on Hand	100,000	Surplus	30,100
Accrued Interest	100		
Accounts Receivable	25,000		
	$145,100		$145,100

A check for $6,000 is then received from a firm of lawyers in payment of an account of $10,000 owing to the company (which had been written off as a bad debt) less 40% collection fee. It is desired to give effect to this item in the balance sheet. What entries should be made on the books of the company and how will the balance sheet then read?

15. (a) How do accounts kept on an "incurred" basis differ from those kept on a "cash" basis?

    (b) Define closing entry, balance sheet, suspense account, sinking fund, reserve.

16. You, *A*, are going to form a partnership with *B* and *C* to engage in the hardware business. You are to invest $10,000 in cash, *B* is to invest $5,000 in cash, and *C* is to contribute land and a building worth together $12,000.

    (a) What is the opening entry?
    (b) What accounts would you suggest for the general ledger?
    (c) For the first year the sales are $40,000. It is decided to set up a reserve for bad debts equal to 2% of sales. Make the entry. What entry would you make when a specific debt is charged off?

PART II

1. (a) If $y = \left(\frac{x-2}{x-3}\right)^{1/x}$ find $\frac{dx}{dy}$

   (b) Integrate: $\int_0^1 \frac{x^3}{(2x+1)^5}\,dx$

2. (a) If $y = u^v$ where u and v are functions of x
Develop the formula for $\frac{dy}{dx}$

(b) Integrate $\int \frac{x^2-6x-8}{x^3-4x}\,dx$

3. (a) Find the limiting value of $\frac{a^x-1}{x}$ as $x \to 0$

(b) By means of Maclaurin's Theorem find the first four terms in the expansion of $\log_e(1-x)$.

4. Find the length of the arc of the catenary

$$y = \frac{a}{2}\left(e^{\frac{x}{a}} + e^{\frac{-x}{a}}\right)$$

from $x = 0$ to $x = a$.

5. Given $u_0 = 16$

$$u_1 + u_2 = 64$$
$$u_3 + u_4 + u_5 = 266$$
$$u_6 + u_7 + u_8 + u_9 = 1024$$

Assuming $\triangle^3 u_x$ is constant, find u_4 and u_5.

6. Find by the method of finite difference the sum of the first n terms of the series

$$1\cdot3 + 4\cdot3^2 + 9\cdot3^3 + 16\cdot3^4 + 25\cdot3^5 + \cdots\cdots\cdots$$

7. If we define $u_x^{(n)}$ as equal to $u_x \cdot u_{x-1} \cdot u_{x-2} \cdots\cdots u_{x-n+1}$
Develop a formula for $\triangle(ax+b)^{(n)}$.

8. (a) If n is the product of 69 integers taken at random find the probability that n is not a multiple of 5.

(b) A and B play for a stake of \$100 each throwing alternately two dice, A commencing; A wins if he throws 6 and B if he throws 7, the game ceasing as soon as either event happens. Find A's expectation.

9. The 26 letters are placed in a bag. A and B draw alternately with no replacements. The winner is the one drawing most of the 5 vowels. A starts and draws a vowel. What is then his chance of winning?

10. Three marksmen A, B, C, fire a volley at a target and it is found that two shots hit. If, on the average, A can hit the target 4 out of 5 times, B, 3 out of 4, and C, 2 out of 3, what is the probability that it was C who missed?

11. One die has three faces marked 1; two faces marked 2; and one marked 3. Another die has one face marked 1; two marked 2; and three marked 3. What is the most probable throw with the two dice and what is the chance of that throw?

12. If on the average nine ships out of ten return to port, what is the chance that out of five ships expected, at least three will arrive?

13. (a) A and B are to pay C, aged 25, an annuity of \$1,000 per year for the remainder of his life. A agrees to pay the annuity for the first 15 years, B to pay the annuity thereafter. What is the present value of A's liability? B's liability?

Given $D_{25} = 30{,}000$
$N_{25} = 525{,}000$
$N_{40} = 200{,}000$

(b) Find the interest rate, given

$l_x = 69000$ $\qquad$ $D_x = 7314$
$l_{x+1} = 68000$ $\qquad$ $D_{x+1} = 6895$

14. (a) Show how the life annuity at any age may be expressed in terms of that at the next higher age.

(b) Express in words the meaning of

$$P_x;\ {}_np_x;\ {}_{|n}Q_x;\ {}_n|q_x;\ {}_nE_x.$$

15. Derive the formulae for the following probabilities:

(a) That at least one of the lives x, y, z will live for one year.

(b) That the first death among x and y will happen in the *nth* year from now.

16. A father bequeaths to his son the sum of $25,000 to be paid when the son is 21. If the father dies when the son is 15, what is the value, on a 5% basis, of the son's inheritance at the time of the father's death?

Given $l_{15} = 96285 \quad l_{21} = 91914 \quad V^6 = .746215$

EXAMINATION FOR ADMISSION AS FELLOW

PART I

1. What is the coverage given by the following and how limited as to amount:
   (a) An engine and machinery policy
   (b) A credit insurance policy
   (c) A druggists' liability policy
   (d) A public official bond
   (e) A workmen's compensation policy

2. (a) As a fidelity underwriter you are asked to pass upon a bond covering the sales force of a concern employing a large number of salesmen on a commission basis. The salesmen frequently make collections on accounts. What information would you require, and what would be your reaction to the character of this information?
   (b) In what respect do the basic principles of surety bonding differ from those of general casualty insurance?

3. (a) Define the coverage and illustrate a loss settlement under each of the following forms of Automobile Collision Insurance:
   Full Coverage
   $50 Deductible
   50% Retention
   Cumulative or Participating
   (b) A car is insured for automobile plate glass coverage and for $15 deductible collision coverage. The car is involved in an accident and is damaged to the extent of $25 for plate glass breakage and $75 for damage to the body of the car. How much must the company pay?

4. (a) An assured takes out an accident policy for $50 premium and later changes his occupation such that the premium

for his new occupation would be $75. He does not notify the company of the change. He is injured while playing golf subsequent to his change in occupation. Describe the basis of settlement.

(b) What are the major factors to be considered in underwriting an ordinary accident policy?

5. (a) What information is necessary to calculate the premium for a plate glass window?

(b) What protection can an automobile garage or sales agency secure under an Automobile Dealers' Liability Policy?

6. (a) Under what circumstances may an automobile liability policy be written on a payroll basis? How is the earned premium calculated? What is the minimum annual premium for such a policy?

(b) Does an Owners', Landlords' and Tenants' Public Liability policy on a department store cover the liability on men sent out to install their products?

(c) Does an Owners', Landlords' and Tenants' Public Liability policy cover (1) the consumption of food products on the assured's premises, and (2) the consumption of food products away from the assured's premises?

7. Discuss the investment requirements of life, fire and casualty companies. Why are different types of investments necessary for these three classes of companies?

8. Having regard to existing economic conditions, give your opinion of the comparative merits for the investments of a casualty insurance company of the following:

Mortgages:
- City property
- Farm property

Bonds:
- Municipal
- Foreign Government
- Railroad
- Industrial
- Public Utility
- Mortgage

Stocks:
- Preferred
- Common

9. Discuss the desirability of the establishment by a casualty company of a reserve for fluctuation of market value of investments, touching upon bases, methods of computation, and relation to investment policy.

10. Upon what general principles is statutory regulation of insurance companies based?

11. (a) Distinguish clearly between representations and warranties as applicable to an insurance contract.

    (b) Define and state the legal status of each of the following elements of a casualty insurance contract:

    Application
    Binder
    Policy
    Endorsement

12. What are the principal features of automobile financial responsibility laws? How do they differ from the law in effect in Massachusetts?

13. (a) What is negligence? What are the characteristics of a negligent act?

    (b) What were the principal Common Law defenses of an employer in resisting suits for damages arising out of industrial injuries?

14. Define and explain the distinguishing economic differences of the following:

    Insurance
    Gambling
    Self-insurance
    Speculation
    Hedging
    Contracting Out

15. In what sense and under what conditions is risk-taking socially productive?

16. What arguments have been advanced for and against old age pension plans? To what extent have old age pension plans been adopted in this country?

1931 EXAMINATIONS OF THE SOCIETY

PART II

1. (a) What are the characteristics of a medium most desirable as a premium basis?
   (b) Discuss the advantages and disadvantages of several possible media for use in measuring exposure in workmen's compensation insurance.

2. Name and describe four methods of calculating claim reserves for known cases in compensation and liability insurance.

3. Under what conditions is it possible to calculate accurately the ultimate policy year loss ratio for various lines of casualty insurance by projecting written premiums and paid losses to an ultimate basis by means of the development of the experience of previous policy years?

4. Outline a method for determining a reserve for claim expense to be included in Schedule P, part 2, of the Convention form of annual statement.

5. Discuss the relative value of the following loss ratios as indices of underwriting results for the various lines of casualty insurance:
   (a) Calendar year paid losses divided by calendar year written premiums.
   (b) Calendar year incurred losses divided by calendar year earned premiums.
   (c) Policy year paid losses divided by policy year written premiums.
   (d) Policy year incurred losses divided by policy year earned premiums.

6. The automobile property damage policy year loss ratio of a certain casualty company increased 10% in 1929 over 1928. Assuming no change in rates over the two-year period, what analysis would you make to determine the causes underlying the increase?

7. How would you determine the approximate effect of a varying countrywide change in manual rates upon the automobile public liability rate level of a casualty company doing a nationwide business?

8. (a) What are the advantages and disadvantages of the revised Schedule "Z" as used in New York, Massachusetts, Virginia, Georgia and North Carolina over the Schedule "Z" used in New Jersey, Illinois and other states? How does this revised system differ from that used in Pennsylvania and Delaware.

   (b) Outline a punch card to be used to prepare loss ratio experience by size of premium and industry schedule under the revised Schedule "Z" now used in New York.

9. Outline a plan for determining the reserves of a multiple line casualty company which would give a more accurate surplus result for internal company study, than the methods provided for in the conventional annual statement blank.

10. What is the purpose of Schedule O of the annual statement and how is this purpose accomplished?

11. Describe the New York Casualty Experience Exhibit. To what extent can the data shown therein be checked against the annual statement?

12. (a) What inconsistencies are present on the disbursements page of the Convention form of the annual statement for casualty companies with respect to classification of expenses?

   (b) Sketch a design for a punch card to be used in the distribution of expenses.

13. In determining classifications for workmen's compensation insurance, which should receive the greater consideration, and why—

   (a) Raw materials and processes, or
   (b) Products

14. (a) Discuss the merits of a proposal to write an unlimited liability policy for automobile and general liability lines from the standpoint of both the assured and the insurance company.

    (b) Give a brief outline of how you would determine the rates for unlimited automobile public liability insurance.

15. Outline briefly the essential features of a complete administrative system of expense control for a casualty insurance company, touching upon organization and method.

16. In a state whose compensation law does not cover occupational disease, it is proposed, in order to make company practices uniform as to coverage, to attach an optional endorsement giving this coverage to the standard workmen's compensation policy, and to make a charge therefor.

    (a) As an underwriter, what is your reaction to this proposal?

    (b) As an actuary, how would you make rates for the coverage which would be equitable, adequate, and nondiscriminatory? Indicate basis and method to be employed.

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