ABSTRACT OF THE DISCUSSION OF PAPERS READ AT THE PREVIOUS MEETING

PRODUCT PUBLIC LIABILITY INSURANCE—JAMES M. CAHILL

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WRITTEN DISCUSSION

MR. FRANCIS S. PERRYMAN:

This is an excellent paper; well conceived and well carried out. It furnishes a good introduction to an important subject that has not been discussed publicly to any large extent. Consequently, any comments on such a paper must be confined to questioning a few minor points and to voicing some thoughts raised by the author's opinions and recommendations.

Product Public Liability is a comparatively new line of insurance which from its very nature must infallibly present to the carriers writing it problems more difficult to handle than those which normally arise with new lines of insurance. The subject matter of this "Products insurance" is the assuming by the companies of risks arising out of the modern tendency of people, particularly in North America, to attempt to make somebody pay for any injurious occurrence. This tendency, commonly called "increased claim consciousness," is in the the case of Public Liability being accelerated by the growth of modern advertising with alluring claims; on top of these two forces claim consciousness is being rapidly increased by the very growth of Product Public Liability Insurance. Under these conditions it will take at least several years before claims conditions settle down and in the meanwhile the carriers will have to watch conditions very carefully and keep their coverages and rates as adequate as possible. One of the most severe criticisms that can be directed against the carriers writing this line of insurance is that not only have they, as usual, commenced to write this line with too sketchy coverages and too low rates, but (perhaps because of the great complexity of this line) have allowed these indefinite coverages and inadequate rates to continue much too long without proper readjustment. There also seem to be some car-

riers that do not at all realize the importance of proper study and underwriting for this form of insurance. Last December a broker specializing in this line addressed a very forceful and illuminating open letter to the carriers regarding the rising loss ratios pointing out examples of the extremely loose underwriting of some carriers.

Coming now to comment on specific points in Mr. Cahill's paper it is interesting to note that the loss ratios on this line of business when brought down to a later year than those given by the author, such figures now being available, show some improvement. The two latest policy years' indications are 63% and 65% as against 74% and 74%. Also, the 1934 calendar year has a loss ratio of 57%, which is considerably better than the 1933 and 1932 figures of 76% and 69% respectively. It is also interesting to note that the volume of business in 1934 calendar year shows a further increase over 1933 of more than $300,000 to $1,334,000. This improvement may be due to some improvement in the price level in line with the thoughts expressed by Mr. Cahill or may be due to more careful Underwriting Department carriers. The loss ratios which I have termed improved, however, are still quite unprofitable.

Mr. Cahill's paper is first of all a general discussion of the legal background of this form of coverage. It is, of course, essential to have such a discussion; it appears, however, to me that as a matter of actual practice the doubts and safeguards mentioned by Mr. Cahill will, in accordance with present day tendencies in legal practice and in social consciousnesss, be all resolved in one way, namely in favor of the public and against the assureds and the carriers. I believe that as time goes on it will become more or less accepted that any injured party who can trace an injury more or less directly to any product will be able to sustain a suit against a manufacturer or distributor without great difficulty. This brings up a point which Mr. Cahill might have dealt with more definitely and that is the need of the distributors or retailers for protection. I believe that it is the practice for such retailers to require the manufacturer to protect them either by agreement or by the furnishing of certificates of Public Liability Insurance. I think, however, that this is a cumbersome way of doing business and that eventually we shall see a system whereby direct coverage is granted by an insurance

company to the retailer for any liability that may attach to the retailer.

The second part of Mr. Cahill's paper consists of an extremely useful description of present day forms of coverage and insurance companies' practices regarding Product Public Liability. In reading this and in thinking back to the first half of the paper regarding the legal aspects it strikes me once more that a lot of the difficulties of the insurance carriers, on this line, have been due to indefiniteness and inconsistencies of present policy forms. I understand, however, that there are now being prepared uniform forms and endorsements. Mr. Cahill's description of manual provisions for this form of coverage is fairly complete. He does not mention, however, the handling of manufacturing risks having retail outlets where for complete coverage the manufacturer must pay not only a premium on all goods produced but also a second premium on the goods sold through the retail outlets. In his list of conclusions at the end of the paper Mr. Cahill might have included recommendations regarding the need for revising the rules for dealing with liability arising out of goods sold prior to the policy period. The present manual rules about this apply only to very durable goods and I believe that they will have to be extended to what might be called semi-durable products. Another recommendation that it seems should have been included was for a thorough study and revision of the present system of policy limits and of the limit tables regulating charges for higher limits. A notable but perhaps intentional omission in the paper is the lack of all reference, or at any rate specific reference, to Product Property Damage.

The third and most important part of the paper deals with the difficulties underlying this form of coverage and Mr. Cahill's suggestions dealing with them. Since Products Liability Insurance is still in the formative stages and since this is one of the first public discussions of the line Mr. Cahill's suggestions naturally are intended to and I hope and believe will provoke further study and discussion. All of his suggestions are valuable and to enter into a complete discussion of them, item by item, would require much more time than I have for this review. There are, however, a few comments which may be useful. Apart from the need for clarification of the actual coverage granted

probably the most crying need would seem to be for a change of the basis of exposure, but on the other hand it is probable that it will be very difficult to effect any violent change in exposure bases. It is easy enough to recognize the deficiencies of the system of basing the premium on the dollar volume of sales but it is not easy to make a satisfactory substitution of some other basis. Of course, normally we do not expect such violent fluctuations in price levels as we have had during the past ten years but should such fluctuations become more normal Product Liability Insurance is not the only line where our practices would require some revision. I would point out that there is a line of insurance, namely Plate Glass, where fluctuations in price levels are recognized by means of varying differentials. Another question that presents difficulties is the charging of different rates for different territories. There is no doubt, as is evidenced by Automobile insurance, that differences in law and judicial practice, from state to state, call for some variation of rates territorially. This would probably not be difficult to accomplish for local risks such as retailers but will be much more difficult to do for wholesale risks where the products are distributed over a wide territory. It does not follow, however, that it is impossible to make territorial distinctions even for such risks. One of the most important suggestions put forward by Mr. Cahill is that of the advisability of using some form of deductible insurance. I think with Product Public Liability the writing of business on such a basis will increase and even if deductible coverages do not become the regular rule they will be applied to a considerable proportion of the business.

In conclusion I want to say once more that Mr. Cahill has done an excellent piece of work in setting forth so clearly the present day condition of and practices in this growing line of insurance and in calling attention to the deficiencies in present day methods of handling it, and I have no doubt that his paper will provide a great impetus towards putting this Product Liability insurance on a sounder basis.

F. S. PERRYMAN.

MR. JOSEPH J. MAGRATH:

In directing attention to the potentialities of casualty side-lines, through his paper on Product Public Liability Insurance, Mr. Cahill has performed a service to the business.

The manufacturer, wholesaler and retailer of various products each has a legal liability to the purchaser-consumer which can and must be insured where desired. The reluctance of some insurers to write this coverage is unfortunate. The agency and brokerage forces cannot serve their clients properly unless they point out the prospects of loss and the nature of protection needed. The insurers must provide an adequate and satisfactory market at fair cost.

The extension of retailer protection through the wholesaler or manufacturer is not satisfactory as pointed out by the author. This method is usually impractical and the occasion of loss is frequently unrelated to the responsibility of the latter. Products sold in bulk may be contaminated after arriving at the retail shop through no fault of the wholesaler or manufacturer. That method is impractical from the standpoint that the obtaining of save harmless certificates from all dealers is hardly feasible and may prove valueless when needed.

The reference to legal phases of the insured's liability to customer's is brief but interesting. Some member of the bar should treat with this feature at greater length.

The absence of standard forms of a satisfactory nature is not surprising when we realize that the much older casualty lines are not yet standardized. The author is entirely right when he directs attention to the need for this reform.

The aggregate limit as now used is, as stated, for the purpose of protecting the accident limit where a series of claims, although probably arising out of a single mishap, may have no provable relationship. This method, however, has the effect of impairing the customary continuing coverage found in liability contracts. Its most serious defect exists in the possibility of an insured having his coverage exhausted without his knowledge. This condition might come about through lack of knowledge of the final values of pending claims. Caution would dictate that an insured should take the most pessimistic view of pending claims and have his coverage replenished when it appears impaired on that basis. High aggregate limits or automatic restoration for a premium are desirable.

The warrant for expanding the aggregate limit for large risks where the premium bears a high ratio to the aggregate limit is made more apparent when an extreme example is cited, viz:

	Units of Exposure	Basic Premium	Standard Aggregate Limit
Risk "A".....	1,000,000	$ 1,000.00	$25,000.00
Risk "B".....	10,000,000	10,000.00	25,000.00
Risk "C".....	25,000,000	25,000.00	25,000.00

Risks B and C would be granted higher aggregate limits at basic rates.

With risk "C" chargeable for a premium equal to the aggregate limit it is inconceivable that such insurance would be either fair of salable. It is obvious that the aggregate limit must bear some relationship to the units of exposure measured by the premium, without excess limit charge.

No exception can be taken to the suggestion that additional interest problems be studied. The extent to which products are handled or processed by the parties at additional interest naturally influences the liabilities of the parties. It is possible that classifications may be graded for additional interest ratings.

The instability of the premium base, when amount of sales is used and economic variations are considered, is indisputable. The sales basis has been used for want of a better practical method. The other bases used are payroll, or fillings, tons, gallons and other units of manufacture or sale. Units other than sales dollars will be developed for additional classes where feasible.

A rate revision which the author said was in order has since been consummated. Many classes remain "a" rated as heretofore, but the number has been materially reduced.

The experience which the author shows as exceeding the permissible in 1930-1933 has improved in 1934 and the value has grown substantially, viz.:

Policy Year	Earned Premium	Incurred Loss Ratio, Including Allocated Loss Expense
1930	$ 676,633	56
1931	771,053	68
Calendar Year		
1932	822,031	69
1933	1,010,355	76
1934	1,334,636	57

This improvement took place before the rate revision which was made effective in April, 1935. The rate level was increased 11% and minimum premiums were advanced.

Underwriting knowledge must include the good sense to employ medical, chemical and engineering research to avoid risks having such unconscionable hazards as the poisonous cosmetic illustrated in the paper. Deductible coverage may prove a happy solution to a number of underwriting problems as suggested.

Conclusions numbered 5 and 6 sound somewhat inconsistent. In the first a conservative policy of underwriting is recommended, while in the last it is suggested that classes other than food and drug products be developed. It is perhaps not intended that the classes representing food and drug products which buy 80% of the coverage should be discouraged by ultra-conservative standards, nor was it intended that those having a comparatively negligible need for coverage should be high pressured to take what those which need it are denied.

It should be noted that approximately 40% of the total coverage represents New York exposure. This would indicate a need for greater field development. Territory rate differentials are negligible.

The author has developed a commendable study in a fair-minded manner.

MR. MILTON ACKER:

The paper on Product Public Liability Insurance presented by Mr. Cahill at the last meeting of the Society, met a long felt want and was most timely in view of the decidedly adverse trend in the experience for this form of coverage during recent years. This paper is the first comprehensive presentation of the subject embracing as it does a most interesting and enlightening discussion of the legal background, basic coverage, underwriting problems and rating procedure.

It will be observed that little more than ten years have elapsed since this type of insurance protection has become of real importance in the light of premium volume. Information as to the present-day premium writings of all classes of carriers is not available but the 1934 written premiums for stock companies exceeded $1,300,000. This indicates a continuing upward trend in the vol-

ume of Product Public Liability business and bears out Mr. Cahill's observation that the future will bring substantial increase in the premium volume.

A legal duty is imposed on vendors of food, beverages, drugs, medicines, cosmetics and all other merchandise or products, to exercise due care to the end that the products sold by them are fit for human consumption and will not be harmful to purchasers or others who may have occasion to use the products. This duty exists by common law and also by such statutes as the Federal Food and Drugs Act of 1906 and the Uniform Sales Act. The existence of this important duty sets aside and makes non-applicable the common law doctrine, caveat emptor (let the buyer beware), and substitutes therefor the doctrine, caveat venditor (let the seller beware). It is proper that particularly in the case of food and beverages, drugs and medicine, and cosmetics, the highest degree of care be exercised by manufacturers in the preparation of their products because the consumer in the average case assumes without question that the consumption or use of these products will not be injurious. The general public purchasing such products are, in a sense, at the mercy of the manufacturers because the latter control the quality and wholesomeness of the products and the purchaser has no means of detecting harmful ingredients or properties. A particularly dangerous situation exists in connection with cosmetics which in some instances have been shown to contain such dangerous poisons as thallium acetate, lead acetate, arsenic and mercury. The Federal Food and Drugs Act contains no provision on cosmetics. It defines a drug as a product intended for the use, protection or cure of disease. Poisonous depilatories or cosmetics may not be labeled as to remedial claims and the Federal Food and Drugs Administration is therefore powerless to prevent their sale. Many distressing cases of injury and death have occurred through the use of cosmetics containing poisonous ingredients. At the present time two different bills are before the Congress providing for a new act to be known as the "Federal Food, Drugs and Cosmetic Act." These bills are described respectively as follows:

A Bill

To prevent the manufacture, shipment, and sale of adulterated or misbranded food, drink, drugs, and cosmetics, and

> to regulate traffic therein; to prevent the false advertisement of food, drinks, drugs, and cosmetics; and for other purposes.

(introduced by Senator Copeland), and

A Bill

> To prevent the adulteration, misbranding, and false advertising of food, drugs, and cosmetics in interstate and foreign and other subject commerce, for the purpose of safeguarding the public health, preventing deceit upon the purchasing public, and promoting fair competition, with respect of commerce in such products.

(introduced by Senator McCarran).

The annual sale of cosmetics in the United States reaches an enormous figure and purchasers are entitled to Federal protection against the sale of products which contain injurious ingredients or are branded with false or misleading claims on their labels.

Mr. Cahill has set forth the several bases upon which sellers may be held liable to consumers of their products. These are: (1) breach of express warranty or implied warranty as to fitness or merchantability; and (2) negligence. It is stated that probably alleged breach of warranty forms the basis on which suit is instituted more frequently than does negligence for the reason that negligence is difficult to prove. This is undoubtedly true with respect to products of a non-durable character such as food and beverages. The presence of foreign or deleterious substances can be detected and a sound negligence case can be established; but breach of warranty undoubtedly constitutes the major basis of suit for such products. This is not necessarily true, however, with respect to products of a durable character such as refrigerators, heating apparatus, electrical appliances, elevators and machinery. For such products it would seem that bodily injury would be caused in most cases by defective materials used or defective workmanship in the manufacturing process. Negligence is here involved and should not be difficult of determination and proof where claims are legitimate. Breach of warranty may be brought into the picture but fundamentally it is believed that negligence will provide the true basis of the suit.

Product Public Liability Insurance policies provide the usual type of protection which is specified in Public Liability policies,

namely, coverage for the liability imposed upon the assured by law for damages as the result of claims arising out of accidental bodily injuries including death at any time resulting therefrom. This is one of the third party liability coverages and claims of employees of the assured while engaged in his business are excluded. While underwriters agree that the basic coverage should include claims due to illness, disease or disability, it has been questioned whether such coverage is clearly indicated by the wording of the Insuring Agreements of the policy. In this connection it may be interesting to quote a few definitions. The word "accidental" is defined by Webster as—"Happening by chance or unexpectedly; taking place not according to the usual course of things." Couch on Insurance says the following with respect to the definition of "accidental"—

> "Death following the eating of mushrooms ordered in a restaurant or oysters or any other kind of food that is usually wholesome but unexpectedly proved to be poisonous, it is obvious that there was in the chain of causation a contributing factor whose presence was so unintentional, unexpected and unusual as to bring the whole series of causative acts within the accepted definition of the accidental."

The Supreme Court of Nebraska has defined the word "accidental" as used in an indemnity policy as—"An undesigned and unforeseen occurrence of an afflictive or unfortunate character resulting in bodily injury to a person other than the insured." There seems little question but that illness or disease resulting from the consumption of food represents an accidental occurrence and also bodily injury within the coverage contemplated by the policy. Whether or not the Insuring Agreement of the policy requires clarification in this regard is a question which must be decided ultimately if a standard form of Product Public Liability Insurance policy is finally developed.

It has been suggested that the basic coverage should apply with respect to claims for mental anguish. Such claims may be brought by relatives of persons who suffer illness, disease or disability as the result of consumption or use of food or other products. Mention has been made also of claims for real or alleged injuries due to physical peculiarities or susceptibility of individuals to products which are not harmful in themselves but the use of which, particularly foods, drugs or cosmetics, may result in skin erup-

tions, infections or other types of bodily injury. These cases have been referred to as "idiosyncrasy" or "allergy" claims. The courts do not recognize contributory negligence as a defense against such claims and it is not difficult to visualize the possibilities involved from the point of view of fraudulent claims alleging such injuries.

Another type of claim which is of interest in connection with Product Public Liability Insurance is represented by suits against manufacturers by dealers or others who are injured in their business and reputation through the sale of the manufacturer's products which are unfit for human consumption or use and cause injury to customers of the dealers.

Underwriters may not agree as to whether existing policy forms provide coverage for the foregoing types of claims. In this connection it is noted that the coverage runs to liability imposed by law upon the assured for damages, which damages are on account of or arise out of bodily injuries or death. It may be contended that this wording implies complete coverage for such claims, even though the advisability of providing such coverage may be seriously questioned by some.

It is pointed out that for restaurant risks Product Public Liability coverage applies for the hazard of food consumption both on and away from the assured's premises, whereas for other risks coverage on the assured's premises is provided under Owners', Landlords' and Tenants' or Manufacturers' and Contractors' Public Liability policies. Extension of the principle of complete division in coverage for the food consumption hazard as compared with the ordinary premises hazard, is a logical and necessary development. This principle might well be recognized in connection with Apartment Hotels, Delicatessen Stores, Department Stores, Drug Stores, Confectionery Stores, Five and Ten Cent Stores, Hotels, Ice Cream Parlors, Retail Bakeries and possibly other classes of risks. Separate and distinct elements of hazards are involved in risks of this character where food is served for consumption on the premises and this condition should be recognized by separate rates and coverages.

Mr. Cahill points out that policies are ordinarily interpreted to cover claims alleging either negligence or breach of implied warranty, whereas breach of express warranty is considered not covered because it is believed such cases are of a contract nature and

arise out of liability voluntarily assumed by the assured. There is reasonable doubt whether a carrier could successfully deny liability by reason of breach of express warranty on the basis explained. It may not be necessary to specify coverage in the policy for implied warranty but good reason exists for a specific exclusion with respect to coverage for express warranty. To provide such coverage might, in effect, be equivalent to guarantee on the part of the insurance carrier that the assured has used proper methods and harmless ingredients in the preparation of his products and that the products may be consumed or used with safety by anybody. A broad coverage of this kind is dangerous and affords an easy method for unscrupulous manufacturers or dealers to secure insurance protection, to the eventual disadvantage of reputable concerns selling products of the highest quality. An analogy might be drawn here to Property Damage Liability Insurance issued to Manufacturers or Contractors where the basic coverage excludes damage to property in the care, custody or control of the assured or his employees. Provision for such coverage in the average case would again be equivalent to a guarantee on the part of the insurance carrier of the proper performance of the assured's operations.

The rates for Product Public Liability Insurance are applied by classification to the total sales (or other basis of premium specified) of all merchandise or products sold or handled by the assured. Ordinarily, manufactured products are sold to the consumer by independent dealers. In some cases manufacturers maintain their own retail store organization, for the direct sale and distribution of their products to the consumer. This condition has been recognized recently by a provision that the rates in the territory where the manufacturing operations are conducted shall be applied to the total factory sales including sales or the sales value of consignments to stores or subsidiary organizations of the assured. If complete coverage is desired on manufactured products of an assured who also operates stores, additional charges are made on the total store sales of such manufactured products at the rates in the territories where the stores are located. This procedure recognizes the separate elements of exposure which exist with respect to manufacturing operations and retail store operations. Where the latter are conducted by independent dealers the manufacturer and the dealer are each charged

their proper premium for the coverage. If the manufacturer operates retail stores, the same premium charge is imposed for the store operations as if they were conducted by independent dealers. It would be desirable from an underwriting standpoint to require concurrent coverage in the same company with respect to such manufacturing and retail store operations conducted by the same assured. It is difficult, however, to apply such a rule in practice because of varying conditions in individual risks. In some cases the operations may be conducted at scattered points throughout the country or numerous products in addition to the manufactured product of the assured may be handled in the stores. Under such conditions an assured cannot necessarily be required to purchase complete Product Public Liability coverage from a single carrier.

A real problem exists in connection with products of a durable nature where complete coverage is to be provided for all products sold during the policy period and also prior to the inception date of the policy. The difficulty of identifying the date of sale of such products has been mentioned. This condition points to the advisability of an underwriting requirement that complete coverage shall be required for prior sales on products of a durable nature where it is not possible to determine the date of sale. Proper additional premium charge shall be made for coverage on products previously sold. Unless such an underwriting procedure is followed, coverage may be afforded for products on which no premium charge is made. A number of classifications referring to durable products have been designated in the Manual to the effect that the rates and minimum premiums exclude coverage for products manufactured, sold, handled or distributed prior to the effective date of the policy. It is assumed that coverage for prior sales will be required by the underwriter with an additional premium charge unless the date of sale can be identified, in which event coverage for prior sales may be excluded if the assured so desires.

The development of a proper method of rating for coverage on prior sales requires further study. Mr. Cahill points out that it would be desirable to develop a general rating method for this coverage but there is question whether the application of a uniform rating procedure will produce equitable results in all cases when consideration is given to the wide variety of products and

varying degrees of exposure in connection therewith. One feature that should be kept in mind is the need for a rating procedure that will permit the development of experience on a proper basis as respects prior sales and current sales, so that rates made on the basis of the developed experience will measure properly the exposure in connection with the products to which such rates are to be applied. The writer cannot wholly agree with Mr. Cahill's observation that the liability is much greater in the case of a firm that has been in business for many years than for a new concern which has recently started operating. This would be true if the hazards in connection with products of a similar character manufactured or distributed by different concerns, were the same. However, a manufacturer may have been in business for many years and established an excellent reputation with respect to the reliability and quality of his product. An accumulated exposure exists in connection with products sold prior to the effective date of the policy. A new concern manufacturing a similar product may use methods or materials in the manufacture of his product which do not conform in any manner to the high standard set by the older concern. It is possible that hazards for the products sold by the newer firm during the policy period will actually be greater than for the products covered for both current and prior sales under the policy of the older firm.

The question of coverage for additional interests under Product Public Liability policies has created some difficult underwriting problems because of the increasing tendency of store operators or other dealers to shift their liability in connection with certain products which they handle, to the manufacturers of such products. This is accomplished through an agreement requiring the manufacturer to hold the dealer harmless or a requirement that the manufacturer shall provide Product Public Liability Insurance for the dealer. It would be desirable to establish definite rules with respect to additional interests' coverage but for the present at least, underwriters seem to agree that this is both impractical and inadvisable. Conditions as respect the liability of additional assureds vary materially according to the nature of the product and the nature of the additional assureds' operations. It is this writer's opinion that the granting of coverage for additional interests under Product Public Liability policies should be discouraged as much as possible. A direct liability is imposed on

all vendors of products as to the fitness of same for human consumption or use. This condition applies, regardless of who the manufacturer may be, by reason of implied warranty. In addition to this some element of negligence, however slight, may be involved in many cases. If a vendor desires coverage for his liability, it should be secured by the purchase of a separate policy. As a practical matter, however, the carriers today must be in a position to make coverage for additional assureds available to their policy holders.

It has been pointed out that implied warranty exists in all cases where coverage for vendors is provided. The most limited form of additional interests coverage beyond this would be the case where all coverage for negligence of the additional assured is excluded and the coverage is restricted to the handling of claims against the additional assured which are, in effect, misdirected and which should have been brought directly against the manufacturer or principal assured. Such restricted coverage can be written most effectively on products of a durable character, where the products are not subject to spoilage or deterioration or where the form of the products is not changed by the additional assured.

The situation becomes more complicated where food products are involved which are ordinarily subject to spoilage, where the form of the product may be altered by the additional assured or where the products are rehandled in some manner as to introduce the element of negligence through acts or omissions of the additional assured. In these cases the element of liability for negligence is involved, the result of which is to place the coverage for the additional assured on a basis fundamentally different from that contemplated under ordinary additional interest coverage. All of these conditions may vary from risk to risk to such an extent that the establishment of a fixed rating procedure would produce results difficult to justify in many individual cases. A further problem exists as respects the difference in the amount of sales for the same number or volume of products sold by a principal assured and by additional assured due to differences in wholesale and retail prices. This feature is of importance in considering charges for additional interests on a percentage basis. There is a further problem in connection with coverage under manufacturers' policies of large numbers of individual dealers

handling the manufacturers' product. It may be difficult to justify the same premium charge for each individual dealer as under a separate policy issued to such dealer, even in cases where coverage for direct negligence of the dealer is involved. This is true particularly in those cases where the product under consideration is but one of a large number handled by the dealer, and where coverage for other products handled is not desired and cannot be required.

There can be no denying the fact that the sales basis of premium charge is not ideal and may produce inconsistent results in individual cases. It is agreed that the use of a unit or quantity of product basis is to be preferred where practicable. A review of existing Manual classifications discloses 16 in number for which the unit or quantity basis applies, and 74 classifications for which the sales basis applies. Of the latter a change to a unit or quantity basis may be considered for 24 classifications or a total of 40. For the remaining 50 classifications conditions are such in the writer's opinion that the sales basis of premium charge must or should be retained. A listing of these groups of classifications follows:

UNIT OR QUANTITY BASIS
(Now Applicable)

Bottle Manufacturing—for beverages under pressure
Bottling—soft drinks
Bottling—spring water
Bottling—syphons
Breweries:
  Beer or Ale—bottled
  Beer or Ale—not bottled
Coal Mines
Distilleries, Rectifiers or Bottlers of Distilled Products
Elevator Manufacturing
Gases—Shipped in Steel Containers:
  Cylinders
  Drums
  Tank Cars
Gasoline or Oil Supply Stations—retail
  Gasoline, Kerosene, Fuel Oil
Oil or Gasoline Distributing:
  Gasoline, Kerosene, Fuel Oil
Wine Mfg. or Bottling:
  Still Wines
  Sparkling Wines

Unit or Quantity Basis Suggested

(Sales Now Applicable)

Auto Hoist Mfg.
Butter or Cheese Mfg.
Canneries—N. O. C.
Cattle or Stock Food Mfg.
Chocolate Mfg.
Cigar or Cigarette Mfg.
Coal Dealers
Confectionery or Chewing Gum Mfg.
Cracker Mfg.
Creameries—Milk and Cream
Flour Mfg.
Hair Waving Machine Mfg.
Ice Cream Mfg.
Ice Dealers or Producers
Ladder Mfg.
Milk Products Mfg.
Packing Houses
Paint or Varnish Mfg.
Perfumery Mfg.
Refrigerating Apparatus Dealers
Refrigerating Machine Mfg.
Sausage Mfg.
Sugar Mfg.
Tobacco Mfg.

Sales Basis Now Applicable

(No Change Suggested)

Advertising Sign Mfg.
Bakeries
Beer Gardens, Taverns or Parlors
Breakfast Food Mfg.
Caterers
Chemical Mfg.
Cleaning and Dyeing
Clothing—Wearing Apparel or Dry Goods Mfg.
Cosmetics, Hair or Skin Preparations Mfg.
Drug, Medicinal or Pharmaceutical Preparations Mfg.
Electrical Equipment or Appliances Mfg.
Elevator Installation, Servicing or Repair
Extract Mfg.
Food Sundries Mfg.
Fruit Juice or Syrup Mfg.
Fruit Preserving
Furniture Mfg.

Gasoline or Oil Supply Stations—retail:
  Lubricating Oils, Greases and Automobile Accessories or Supplies
Glassware, Porcelain or Vitrified Products Mfg.
Heating Apparatus Dealers
Heating Apparatus Mfg.
Instrument or Optical Goods Mfg.
Laundries
Macaroni Mfg.
Machinery Mfg.—N. O. C.
Metal Goods Mfg.—N. O. C.
Oil or Gasoline Distributing:
  Lubricating Oils, Greases and Automobile Accessories or Supplies
Paper or Paper Goods Mfg.
Pickle or Relish Mfg.
Polish or Dressing Mfg.
Pyroxylin Products Mfg.
Restaurants
Soap or Soap Powder Mfg.
Steel or Wire Wool Mfg.
Stores:
  Clothing, Wearing Apparel or Dry Goods Stores
  Confectionery Stores
  Delicatessen Stores
Department Stores
Drug Stores—retail
Drug Stores—wholesale
Five and Ten Cent Stores
Grocery Stores—retail or wholesale
Liquor or Wine Stores—retail or wholesale
Mail Order Houses
Meat, Fish or Poultry Stores or Dealers
Meat, Grocery and Provision Stores Combined
Stores—Food or Drink—N. O. C.
Stores—not Food or Drink—retail or wholesale—N. O. C.
Surgical Supplies Mfg.
Toy Mfg.

A revision of the rates for Product Public Liability Insurance has been made since the paper under discussion was written and it is anticipated that a further review will be made of these rates in the light of additional and later experience to be filed during the current year. The recent revision resulted in an average increase in the rate level, with both increases and decreases in the rates for some classifications and no rate changes in the rates for others. A general increase in the scale of minimum premiums was

made concurrently with the rate revision. The volume of Product Public Liability experience over a five year period is fairly substantial in the aggregate. However, when this experience is reviewed by individual classification it is extremely limited for all but a relatively few classifications. This condition makes the rate makers' problem difficult and in addition to the actual experience indications reliance must be placed upon combinations of experience for a number of classifications, consideration of analogies in hazards between individual classifications and upon underwriting judgment in the rate making process.

The principle of varying rates by territory in accordance with territory conditions, should be extended wherever possible. There are certain locations where liability claim conditions are notably bad and this is true of Product Public Liability as well as other Liability coverages. Uniform countrywide rates applied to business in such territories will inevitably produce an underwriting loss. It is probably true that the distribution of products of a durable nature is so broad in the average case that territory rates are not, in general, practical for such products. For food and other products which are largely or entirely consumed locally, the application of territory rates is feasible and should be introduced. This problem is to receive further study by the rate makers. It may be possible to apply for Product Public Liability Insurance a principle similar to the principle in Automobile Insurance whereby in effect, risks are assigned to the territories where the operations are conducted and losses developed in other territories are allocated to the home territory.

Product Public Liability Insurance creates some real difficulties for the underwriter in the handling of small risks. Present day rates are low and the volume of products sold must be substantial before a premium in excess of the minimum is produced. A considerable hazard is assumed by the carrier even on the small risk. The exposure to loss is probably greater in comparison for Product Public Liability than in other Public Liability risks of equivalent premium size. One explanation of this may be the tendency for a relatively larger percentage of fraudulent claims to be made in the case of Product Public Liability coverage. It is exceedingly difficult for the carriers successfully to resist such claims in many cases because of lack of facts, evidence or definite proof as to the responsibility of the assured for the alleged in-

juries. Small risks are not looked upon with favor by underwriters unless adequate minimum premiums may be charged. One possible solution of the difficulty referred to by Mr. Cahill is the writing of coverage on a deductible basis, particularly in the case of foods, drugs and cosmetics. It is probable that a rather wide variation in the distribution of claims by size exists within the Manual classifications. This may be accounted for by the fact that certain products such as food, are apt to produce a larger number of fraudulent claims with a lower average cost per claim than products of a durable nature. There is need, therefore, for a certain flexibility in the determination of rate discounts for deductible coverage, dependent upon conditions in the individual risk.

A justifiable caution is being exercised by underwriters in the acceptance of Product Public Liability business. The reasons have been stated. This condition will have the natural effect of retarding a development of the line. The present-day premium volume indicates that the amount of insured business is insignificant when consideration is given to the tremendous quantity of products and merchandise of all descriptions which are manufactured and sold annually in this country and which are potential purchasers of this form of coverage. The development of forms of coverage and a rating and classification procedure which fit the needs of the business is essential before this coverage is popularized and more of the better type of assured are attracted to and convinced of the desirability of purchasing the coverage.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. JAMES M. CAHILL:

The discussions of Messrs. Acker, Magrath and Perryman add considerably to the available written material on Product Public Liability Insurance. The writer now feels that his paper was worthwhile if for no other reason than that it prompted Mr. Acker's valuable comments based on his broad underwriting experience with this line of business.

Both Mr. Magrath and Mr. Perryman commented upon the apparent improvement of the Product Public Liability experience in view of the fact that the loss ratio reported for calendar year 1934 was 57%. The writer believes that too much weight should

not be given to this calendar year indication when one considers its basis. It is likely that the loss ratio of 76% developed for calendar year 1933 was too high, whereas that of 57% for calendar year 1934 was probably too low. The policy year loss ratio data as of December 31, 1934, compiled by the National Bureau of Casualty and Surety Underwriters show the following loss ratios for policy years 1931 to 1934:

Policy Year	Incurred Loss Ratio (Including Allocated Claim Adjustment Expense)
1931	65%
1932	71
1933	63
1934	65

The loss ratio shown for policy year 1934 is not a reliable indication of the ultimate result for this policy year, of course, since the experience is only as of 12 months' development.

Mr. Magrath has suggested that some member of the bar treat with the legal phases of the assured's liability to customers at greater length than the writer was able to do. If this suggestion is followed, it will undoubtedly prove of value in creating a better understanding of the legal problems involved in this coverage. Furthermore, such a paper would be invaluable to claim departments.

Mr. Perryman suggested that the writer should have included a recommendation for a thorough study and revision of the present system of policy limits and of the limit table regulating charges for higher limits. This recommendation would apply equally well to all of the Liability lines, other than Automobile. The omission of reference to Product Property Damage Insurance was intentional. It would be preferable to include this line in a general discussion of all of the Property Damage lines, other than Automobile.

The discussions bring the writer's paper up to date on several points, since they include reference to certain changes adopted at the April 8, 1935 general revision of Product Public Liability rates. At this revision, Special Tables A and B were adopted for this line replacing Tables A and B. Higher rates for New York State than for the remainder of the country were adopted for Confectionery Manufacturing, Confectionery Stores and Ice

Cream Manufacturing, and the territorial differential for Bakeries in Massachusetts and New York State was continued. Specific notation was also made in the case of a number of classifications to the effect that the rates and minimum premiums exclude coverage for products manufactured, sold, handled or distributed prior to the effective date of the policy. If such coverage is desired under these classifications, the risks must be submitted to the National Bureau for rating. In connection with the problem of developing a general rating method for coverage on outstanding products, the writer is inclined to agree with the comments made by Mr. Acker in his discussion.

Mr. Acker has also pointed out that the food consumption hazard for risks other than restaurants should probably likewise be covered by Product Public Liability Insurance rather than by the Owners', Landlords' and Tenants' or the Manufacturers' and Contractors' Public Liability policies. This would indeed be a logical development and in time this change will probably be made in the case of those risks which include a substantial food consumption hazard. In conjunction with the filing of Owners', Landlords' and Tenants' Public Liability classification experience with the National Bureau in the fall of 1935, it is the writer's understanding that a segregation of the loss experience of certain classifications between food consumption losses and all other losses will be required in order to obtain an indication as to the necessity for such a change.

At the April 8, 1935 revision, the Product Public Liability standard minimum premium was increased from $25 to $35 per annum. This is the highest standard minimum premium for any of the Liability lines, other than Automobile. Furthermore, there are higher special minimum premiums specified for most of the important Product Public Liability classifications. The need for a substantial premium charge even on small risks is explained fully by Mr. Acker.

Mr. Magrath has properly pointed out that the insurance companies must employ the technical assistance of medical, chemical and engineering analyses in order to avoid risks having such hazards as to make them uninsurable for Product Public Liability coverage.

In considering the value of the deductible method of writing coverage for Product Public Liability, due consideration must be

given to the comments of Mr. Acker regarding the determination of the rate discounts. Since the discounts employed at the present time are based on the experience of the Owners', Landlords' and Tenants' Public Liability line, it is quite likely that they are not quite correct for this form of coverage on certain types of risks. This subject deserves further study.

Mr. Magrath has stated that conclusion 5 suggesting that a conservative policy of underwriting be followed and conclusion 6 suggesting that an attempt be made to develop the premium volum on classes other than those dealing with food or drug products sound somewhat inconsistent. It was not the writer's intention to recommend that coverage be denied generally to those risks handling food and drug products, but rather that adequate rates be insisted upon and that many of these risks be written on a deductible basis in order to coerce an improvement in the experience. The recent epidemic of food poisoning cases in the vicinity of New York City as the result of tainted pastry from one bakery is an example of the possible catastrophic loss which may be incurred on this coverage. There are undoubtedly many concerns other than those dealing with food or drug products which would consider it to be a wise move to purchase Product Public Liability coverage if the subject were brought to their attention. If this coverage is popularized and more of the better type of assureds are sold protection, the development of the line will be on a much sounder basis than at present where the coverage is purchased largely by only such risks as have learned though actual experience that there is a great need for it.

REPORTS OF CASUALTY INSURANCE LOSS RESERVE SCHEDULES—JOHN R. LANGE

VOLUME XXI, PAGE 50

WRITTEN DISCUSSION

MR. THOMAS F. TARBELL:

It was both appropriate and timely that Mr. Lange should bring to our attention the very important inconsistency arising from the fact that, although meticulous care and consideration have been given to the determination of asset values in recent years, the corresponding liabilities or reserves have generally been

accepted more or less at face values. His paper should be of particular interest to supervisory authorities and should help to prevent a recurrence, or at least mitigate the severity, of some failures such as have occurred in the last four years.

The problem of proper reserves for the Liability and Compensation lines which involve claims of long term duration is at best a difficult one, both from the standpoint of the insurance company and the insurance department. The original theory underlying existing Schedules P is that for the more mature but unliquidated claims the present values can be determined with reasonable accuracy on an individual claim basis, as in Compensation, or on an average suit value basis, as in Liability; that for more recent or unmatured claims the reserve should equal the aggregate ultimate incurred losses and loss expenses, less the amounts paid thereon to date. The aggregate ultimate losses and loss expenses are determined as arbitrary percentages of earned premiums, the percentages conforming approximately to the provisions in the rates for these items.

It was later recognized that such formulae did not provide adequate reserves in the case of a company whose average suit values were in excess of the prescribed values or whose loss ratio experience ran in excess of the reserve loss ratio. Accordingly, a case basis reserve test was incorporated in both parts of Schedule P. If the case basis produces a larger reserve, such reserve must be carried. However, it is quite obvious that if the case basis produces the larger reserve, the reserve is inadequate if it does not include a reserve for loss expense, which the formula reserve contemplates. Also, even if the formula reserve produces the larger reserve, the reserve may still be inadequate, since the difference or "equity" may not be sufficient to provide a proper reserve for loss expense. Further, the case basis reserve may in itself be inadequate, because of immaturity of claims and the consequent difficulty of their accurate or oven approximate valuation, or the reserves may be designedly inadequate.

It is not my purpose to discuss the case where reserves have been deliberately falsified. Only eternal vigilance and frequent and exhaustive examination of the company by the insurance department of the state of domicile or "Convention" examinations by several insurance departments can adequately deal with such cases.

The writer had the privilege of assisting in the work of the Special Committee on Compensation and Liability Loss Reserves of this Society, which presented a report at the November 21, 1930 meeting (See *Proceedings,* Vol. XVII, Part 1, Pages 137-145), which recommended five fundamental principles respecting Liability and Compensation loss reserves, as follows:

1. The loss reserve should be based solely upon claims (and medical) excluding loss expense.
2. The loss reserves should be based upon individual estimates of outstanding claims (and units).
3. A minimum reserve based upon a pure loss ratio check should be applied for losses under policies issued in the three latest policy years.
4. A reserve for loss expense (both allocated and unallocated), to be determined by formula, should be set up on the "Liabilities" page of the annual statement.
5. Schedules or exhibits showing the development of the aggregate loss reserves (each line of business separate, but for all policy years combined) for a period of five years should be incorporated in the statement.

The report in question was given little publicity outside of our *Proceedings* and apparently made no impression upon state supervisory officials until 1934, when new Schedule P, Parts 5 (Liability, Auto and Other Combined) and 5A (Compensation) embracing in substance principle No. 5 above were incorporated in the annual statement.

These exhibits should be of value both to state insurance departments and to the companies in checking the adequacy of loss reserves. For its own benefit, a company should know whether its aggregate Compensation and Liability loss reserves are adequate, so that if inadequate it can make up the deficiency by the application of factors to the respective policy years' incurred or outstanding losses, by the addition of specific amounts, or otherwise; basing the factors or amounts on a comparison of projected ultimate loss ratios with indicated loss ratios (a prospective method), or upon the past record of reserve deficiencies (a retrospective method).

It has been pointed out, and is of course perfectly obvious, that if case basis reserves are in excess of formula reserves and no reserves are carried for loss expense, or if case basis reserves are less than formula reserves but the difference or "equity" is in-

sufficient to produce a proper reserve for loss expense, the aggregate reserves are inadequate. Further, as indicated by Mr. Lange, the writing of business at less than manual rates tends to produce inadequate loss reserves. It is the belief of the writer that reserves for the Compensation and Liability lines should be computed on both the formulae bases and upon the case basis, including an adequate reserve in the latter case for loss expense. The aggregate reserves for both lines combined should be compared on both bases and the larger aggregate incorporated in Page 5 of the annual statement. This plan has been followed for several years by the company with which the writer is associated. The plan as followed also provides for setting up separate liabilities for loss expense, which is consistent with the practice followed for the other lines of insurance.

MR. RUSSELL O. HOOKER:

Mr. Lange's valuable paper focuses our attention upon a matter of importance to the future solvency and welfare of casualty insurance companies. The problem of adequate liabilities, while as important to solvency as that of asset valuation, is capable of less immediate and exact treatment; hence, perhaps, the lack of adequate attention to this subject in the past. The value of the assets listed in an annual statement can, in general, be determined immediately; that of the liabilities, however, must remain little more than a guess for some time, although knowledge of the experience and practices of a particular company may offer some clue to the answer.

This necessary delay in determining the adequacy of liabilities applies especially to the Schedule P reserves. Given two consecutive annual statements, it has heretofore been impossible to trace completely their development from one year-end to the next, due to the necessary exclusion of data for the last policy year. This defect will be remedied to a certain extent by the new Parts 5 and 5A, which split the policy years into years of incurred loss and provide for the development of incurred liability and compensation losses, and that of allocated loss expense if included in the case estimates.

The author cites, for purposes of illustration, an instance of inadequate Schedule P reserves in the 1930 statement of a com-

pany which was relicensed by 47 states in 1931 and placed in receivership early in 1933. It is incorrect to suppose that this situation was entirely lost on the insurance departments that relicensed the company in 1931. The same condition existed in several other institutions which were correctly judged able to survive the depression. Adequacy of reserves is but one of the factors (albeit an important one) to be considered in determining whether a company should be relicensed.

The blame for any chronic under-reserved condition should be assessed on that insurance department which examines the company periodically, rather than on the departments of other states which must annually determine whether to relicense such company or, by refusing to do so, injure it and perhaps the business generally. The other states where the company operates should be able to rely on the thoroughness and accuracy of the regular periodic examinations made by the home state department. Such examinations should, but do not always, include a revision of all claim reserves made six or nine months after the statement date. The original reserve set up should be corrected in the light of the development over that period, including any necessary changes in outstanding case estimates as determined by review of a substantial number of open claim files. The examination reports of one department indicate that it makes an upward adjustment of the percentage factors used in computing the formula reserves, if indicated by the company's past experience, and adds provision for unallocated loss expense where the company has failed to include the same. Careful determination of Schedule P and other loss reserves along the lines here indicated is a vitally important part of examination procedure, as it gears the company up to the point of maintaining adequate reserves of its own accord. Of course most companies seriously endeavor to do this in any case; however, experience has shown that weak departmental examinations may cause trouble in this respect.

The experience of the past few years has thrown some light on the terminal results of habitual liability undervaluation. Such a condition in itself is not immediately fatal to a company; the day of reckoning may be long deferred if premium volume is maintained and other factors are favorable. When the inevitable business depression is encountered, however, and current income is no longer sufficient to pay claims, the under-reserved company

may find itself severely handicapped as a going concern and in need of immediate and substantial assistance in order to survive.

Should the construction of Schedule P prove, as the author says, of more interest than that of the other loss reserve schedules, this fact must be due to its complexity rather than to any superior scientific merit. A brief review of what appear to be some of the more serious flaws in this schedule is as follows:

1. The statutory 60% and 65% factors in Parts 1 and 2, respectively, are too low for some companies, especially those writing at cut rates. These factors should in some manner be varied to fit the company's past experience or, as the author remarks, the use of the "voluntary" additional reserve column should be *required* to bring the formula reserve for the last period into line with such experence.

2. There seems to be a lack of uniformity between companies in making up the case basis estimates. Most companies provide here for allocated loss expense, although some do not. The practice as to setting up a figure for incurred but unreported losses varies also. No liability for future unallocated loss expense payments is customarily included, although this point is of some financial importance. Insofar as the case basis estimates are the alternative to the formula reserve, they should certainly cover the same ground as the formula, which of course is supposed to provide for future losses and claim expenses, whether allocated or unallocated.

3. The total of the unallocated claim expense payments for which credit may betaken should be limited by some maximum percentage of loss payments, or at least some standard method be laid down for the computation of such expense payments. This opinion is of course based on the fact that such disbursements for the last period enter into the determination of the formula reserve.

4. The statutory liability suit limits are out of line with the trend toward higher verdicts in recent years; formerly plenty of "equity" was hidden in the suit reserve column, but the reverse is more generally the case today. Also, some definite instruction should be placed in the schedule as to which cases should be included in the suit reserve column. Furthermore, the door should be closed to the possibility of valuing a suit brought jointly by

several injured persons by applying the statutory amount for a single suit.

5. The practice of discounting future compensation payments at 4% is out of line with the current rate of interest earnings, and this condition may hold for some time to come.

There are other criticisms which might be leveled against these schedules, and there will doubtless be some difference of opinion as to the views herein expressed. The timely presentation of this paper would seem to offer a favorable opportunity for such further study into this subject as might result in the recommendation of valuable technical improvements in Schedule P, as well as in state laws with respect thereto.

COMPENSATION EXPENSES PER POLICY—HARMON T. BARBER

VOLUME XXI, PAGE 65

WRITTEN DISCUSSION

MR. GRADY H. HIPP:

Mr. Barber's paper on Compensation Expenses per Policy contains an interesting and worthwhile contribution to the study of expenses, a subject which undoubtedly will increase in importance in the near future. The discussion in his paper is largely based upon an analysis of the combined returns of countrywide compensation figures compiled by the Pennsylvania Compensation Rating and Inspection Bureau in 1934. The returns were filed in response to a Special Pennsylvania call for incurred expenses.

The writer is connected with a carrier which does not transact business in Pennsylvania and which accordingly was not called upon to file a special expense return. Consequently, the writer does not have first-hand knowledge of the actual details in connection with filing and compilation of the special expense data.

Mr. Barber refers to the special call as outlining a standard method for treating overhead expense and expense items less susceptible to definite allocation. His statement is perhaps too strong inasmuch as "special investigation" is the suggested basis of allocation of a large majority of the items. Such a suggested basis not only permits departure from a standard procedure, but of necessity makes it inevitable.

Mr. Barber recognizes certain weaknesses in the Pennsylvania study of expenses which probably cannot be entirely eliminated

in any future study. The pro-rating of total administration expenses in accordance with earned premiums by lines of business is a weakness of considerable importance. It may well be that an analysis of the returns of the carrier or carriers which limit their writings entirely or largely to compensation business would offer a partial answer to the above criticism.

By far the greater part of the expenses allocated on a per policy basis was in connection with items for which the special expense call suggested "special investigation." The allocation of salaries of units with limited functions was largely made on the basis of special investigations. The allocation of salaries of general service and supervision was made on the basis of percentages calculated from the allocation referred to in the preceding sentence. The allocation of payroll audit salaries and expenses was made almost entirely on the basis of special investigations.

While I do not know to what extent the individual carriers followed the suggested bases, the procedure undoubtedly resulted in the individual judgment of the carriers playing a large part in the allocation of expenses. It must be recognized, however, that by calling for the allocation of expenses under a large number of specified items, errors of judgment probably were offsetting to a considerable extent.

The table of comparative average expenses per policy for participating and nonparticipating carriers shows very interesting results. It is, no doubt, also true a study of the differences in returns of individual carriers would produce enlightening information. If the variations in returns of individual carriers are not too great, the credibility of the combined returns is considerably enhanced.

A consensus of the views of the carriers (which filed returns under the special expense call) as to desirable improvements in the form of the call should reveal constructive suggestions.

It is generally recognized that there are certain items of expense per policy which do not vary with the size of the premium. The Pennsylvania study of expenses undoubtedly is the most constructive one thus far made.

There can be little, if any, disagreement with Mr. Barber's conclusion that every risk should be charged with an expense constant as a part of its contribution towards the expense of administration, payroll audit and possibly inspection.

The expense constants suggested by Mr. Barber probably will require changes in the future. However, until such time as further studies may indicate the need for changes, such constants must be accepted as the most reasonable figures now available.

COMMENT ON THE UNDERWRITING OF COMPENSATION FOR SILICOSIS—ROBERT V. SINNOTT

VOLUME XXI, PAGE 59

WRITTEN DISCUSSION

MR. WILLIAM N. MAGOUN:

Mr. Sinnott concludes his "Comment on the Underwriting of Compnsation for Silicosis" with the optimistic statement that "perhaps it will not be the unsolvable problem it is expected to be." The solution of any difficult problem must rely upon an incentive to find the answer, combined with a willingness to devote as much time as may be needed for a thorough study and discussion of all available data bearing on the question. Neither of these two essential elements is lacking in the present instance, as there always exists the incentive for good underwriting practice, and already the insurance companies have demonstrated a willingness to attack the silicosis problem.

My discussion of Mr. Sinnott's paper will be confined to this phase of the situation, namely the setting forth of certain points bearing upon the problem of underwriting risks having employees exposed to the hazard of silicosis.

The foundry industry is a typical illustration. We have risks which are foundries and nothing else, where all the employees are exposed to the dust hazard resulting from the use of sand; and we have other risks where the foundry is only an incidental operation, the principal operation being of a wholly different character, such as a machine shop.

Since December 1, 1933, there has been in effect in Massachusetts a supplementary occupational disease rate of $2.00 per $100, applicable to the payroll of all employees exposed to a foundry hazard in any risk, however classified. While this rate is not exactly equivalent to a per capita basis as suggested by Mr. Sinnott, it is a wholly segregated charge for the specific occupa-

tional disease hazard involved, and is separately stated in the policy and treated independently for statistical purposes.

The New England Foundrymen's Association has urged the adoption of some workable system under which this supplementary occupational disease rate may be adjusted to reflect the difference between the foundry which is ready to improve and maintain plant conditions justifying a reduction in the charge, and the foundry which is not willing to do so. In other words, the foundrymen ask for what Mr. Sinnott suggests might be desirable, "a schedule credit scheme for the rating of individual risks." To the accomplishment of this end, the insurance company representatives have devoted considerable time and thought, and have produced an Occupational Disease Schedule Rating Plan.

In addition to such rules as pertain to "Applicability," "Surveys" and "Costs" which are inherent in any such instrument, the plan provides for physical Standards, Dust Count Survey Requirements and Rules for the assignment of risks to one of six classes with charges or credits according to such class assignment. The dust particle count which must be made in accordance with an approved technique and must include samples taken in the operations specified, in order to show representative conditions throughout complete cycles of dusty operations, is an important feature of the plan.

Observance of the physical Standards is important, and may be expected to so control the dust as to bring the dust count within a safe range. In the last analysis, however, it is the quantity of dust particles in the normal breathing zone of the workmen, which really measures the condition of the plant from the standpoint of the silicosis hazard presented.

Recognizing that in some plants, although the Standards may be observed, the dust count still remains too high for safety, and in other plants the dust counts may be within the accepted range of safety even though not all of the Standards are fully complied with, the plan, through the assignment of individual risks to one of the six classes referred to, attempts to do justice under all the varying conditions to be encountered.

The rule of the plan covering the above is as follows:

> All risks surveyed shall be assigned to the proper class according to the results of the survey with respect to compliance with Standards, and the Dust Count reported, as follows:

Risks Complying with All Standards	Risks NOT Complying with All Standards	Dust Particles Less than 10 Microns in Size per cu. ft. of Air
Class A	Class D	All Dust Counts under 10,000,000
Class B	Class E	Any Dust Count 10,000,000 or over but none over 20,000,000
Class C	Class F	Any Dust Count over 20,000,000

Rate modifications are provided by classes as follows:

Class A Credit "V"
Class B neither Credit nor Charge
Class C Charge "V"

Class D Credit
Class E Charge
Class F Charge

In establishing the value of "V" as 40% of the supplementary occupational disease rate (40% of $2.00 = .80) as proposed in Massachusetts, the plan does not conform to Mr. Sinnott's statement that "due to the uncontrollable development of silicosis, credit can be given only where no evidence of the disease is present," which would be the case if the entire supplementary occupational disease rate was subject to removal. Rather, the plan recognizes that while 60% of the supplementary occupational disease rate must be retained in all cases to provide for accumulated silicosis cases which the plan cannot reach, through the requirement that new foundry workers may be employed only after passing acceptable physical examination including X-rays of the chest, it is feasible to allow a credit up to the remaining 40% of the supplementary occupational disease rate, where all requirements of the plan are met, with lesser credits or charges for risks falling in the other prescribed classes.

Boston, May 11, 1935. W. N. MAGOUN.

MR. F. ROBERTSON JONES:

My comments on this paper are as follows:

A primary difficulty in discussing this problem is that we know so little about silicosis. It seems to me that Mr. Sinnott starts by assuming that we have more definite knowledge of the subject

than the facts warrant and thereby tends to simplify the problem unduly.

First: In introducing his comments, Mr. Sinnott treats silicosis as a disease caused only by silica dust (SiO_2). In medicine, that is now the prevailing theory; but it is not universally accepted. And in law, we are heading for broader definitions, not to mention coverage of other related diseases such as asbestosis, anthrasilicosis, etc., of dust diseases generally, or of "occupational diseases" indefinitely. Doubtless the formulation of a practicable plan of underwriting compensation for silicosis, most strictly defined, is the crux of our problem, and its solution may be expected to provide a basis for variations to fit other associated diseases. But in such comments as Mr. Sinnott's, I think that it should be more distinctly indicated that we are facing the probability of mutable definitions not merely in the laws, but also in medicine.

Second: Mr. Sinnott assumes that silicosis "may be definitely diagnosed by an X-ray study." My advice is to the contrary. In Great Britain, I am informed, the prevailing opinion is that diagnosis is nearly always uncertain short of a *post mortem,* and that diagnosis on claims for disablement are merely expert opinions as to probabilities, in other words, inferences from case histories. In practice this means that the loss cost of disability cases may vary immensely according to the character of the administration, the rules of proof, the period of exposure required, etc. Mr. Sinnott notes that the rating problem will be complicated by the probability of a progressive increase in the scale of benefits. In my opinion, even more to be feared is a progressive liberalization in administration, in the rules of proof, etc.

Third: Mr. Sinnott avers that silicosis, once contracted, is inevitably progressive. That may be true of silicosis, strictly defined, after it reaches a definite stage. But it is more than questionable about pre-primary silicosis; and it would surely not be true in all cases of false diagnosis of silicosis—of which a multitude may be expected. Therefore, Mr. Sinnott's deduction that there will be no *temporary* disability cases seems to me to be greatly in error.

Coming now to the gist of Mr. Sinnott's suggestions:

I think that we must reject any idea of rate making based upon a *legal* apportionment of liability among successive employers and insurers. There are lengthy pros and cons; but the

only practical conclusion is that we must face the problem of making rates based upon the proposition that the entire liability will fall on the employer and insurance carrier as of the time of the last exposure or last injurious exposure. This conclusion tends to bar some phases of Mr. Sinnott's suggestions.

Then, I think that rates will have to be made in advance of experience. There has been some experience in Wisconsin and Massachusetts and there is some more impending in California. But such experience has all been abnormal and has turned largely upon the peculiar law conditions in each of such States respectively. The underwriting problems impending in North Carolina, New York and possibly Illinois and Missouri are so radically different as to leave us without any really relevant experience data to go by. Consequently Mr. Sinnott's suggested formula for rate making, however sound it may be for future application, when experience shall have been accumulated, is of no help in the present emergency.

However, that leaves what I appraise to be Mr. Sinnott's basic proposition, namely that the "subjects" or "risks" to be rated for insurance against silicosis must be the individual workmen and not the plant with its workmen indiscriminately. With that proposition I am in hearty accord. And it seems to me that this proposition has immediate application. At the start, under any law newly imposing liability for silicosis regardless of fault, the charge for insurance coverage of such liability must be fixed according to formulas entirely different from those which are being followed in accident compensation rating. This presents a problem as to which I am in the dark, and, as a child, am crying for the light.

May 10, 1935. F. ROBERTSON JONES.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. ROBERT V. SINNOTT:

I wish first to thank Mr. Jones and Mr. Magoun for their comments on my paper on underwriting for silicosis. Naturally, we are now handicapped by the lack of adequate legal and medical definitions of silicosis. Both professions are working their ways

forward toward solutions which we hope will clear the air. However, regardless of the blurred outlines, industry, our courts and legislative bodies have recognized that such a disease exists, that its effects run counter to social welfare and that something must be done about it. The well tried panacea of insurance has been applied or will be shortly and the problem is in the hands of the sorely tried insurance carriers. We must perforce make our own definitions through medical research and through the carrying of such results attained into the courts for their baptism of legal fire.

Suppose for the present, however, we start with the physical impairment that results from silicosis. If a man who has been exposed to a dust hazard, exhibits the known symptoms of silicosis and becomes so inefficient in his work through his physical inability to perform assigned tasks that his employer finds it more economical to replace him, then this old worker has suffered a loss of earning capacity and his claim of disability arising out of silicosis will be honored beyond a doubt. Of course, we will have border line cases and cases of malingering. We have them now in industrial accident compensation, but their effect has not been totally to vitiate the entire system.

I believe the point of the economy for the employer of keeping on old employees should be emphasized. If through charging excess premiums for old exposures regardless of the physical condition of employees, we make it more costly for the employer to retain his old employees, we are going to force many of these older men out of work. Since they are out of work and since they have been exposed to a hazard of silicosis, it may reasonably be expected that they will make claim. Our recent experience will tend to make us believe that such claims will be honored. Definite medical diagnosis may be difficult but the fact that the man has suffered a loss of earning power through an exposure to silicosis will operate in his favor. This will certainly be the case where we lack clear-cut medical and legal definitions of silicosis. If we force disability in this fashion we are forcing also liberalization of administration and we will not be altogether blameless for our own grief.

I agree that there may be no legal apportionment of liability among successive employers. It does not seem probable that legislatures would permit a condition to exist where a claimant of

the usual type must pursue his award against possibly a dozen different carriers. One must be responsible, probably the one of last record. However, there is nothing to prevent other companies which have carried the risk during the subject's exposure from contributing to the award either through a pool or through a mutual reinsurance agreement.

Now, as for rates. Certainly we may anticipate vast difficulty. The path of exposure (either men, years, or man years or payroll) and actual dollars of loss is cluttered with stumps. Awards differ between states; awards have been out of proportion. Payroll is difficult or impossible to obtain if we attempt to underwrite the individual subject. I do not feel that it is improbable, however, that the companies may have in their own claim files case histories enough to produce tables perhaps raw and uneven, but perhaps reliable enough for a start; to show the probable duration of time between first exposure and ultimate disability and to make charge accordingly.

Schedule rating plans are necessary in the present stage of silicosis insurance. Preventive measures must be pushed by the companies in self-defense and in the interests of humanity. They have no bearing, however, on the total costs to the carriers since all such plans are supposed to be in balance. The important thing it would seem is the basic manual rate. However, it seems illogical to the writer to establish deviations from a rate before the rate itself is satisfactorily established.

If we are underwriting on a per capita basis and are allowing credits for prevention apparatus, should we allow this credit on the premium charge for a man who already has silicosis? The prevention apparatus has no effect on his condition. The damage has been done. The same observation is valid in connection with any experience rating plan—if we apply credits on the theory that the number of cases in the past is closely correlated with the number of cases in the future because the employer will continue to exercise preventive control and because employees are careful. We know or at least we should know, how long we have to collect money enough to pay his final disability benefit. We should proceed to do this after the manner of life assurance.

At this stage of disability I see little fundamental difference between our own operation and that of a life insurance company.

"THE EXPERIENCE RATING PLAN AS APPLIED TO WORKMEN'S COMPENSATION RISKS"—MARK KORMES

VOLUME XXI, PAGE 81

WRITTEN DISCUSSION

MR. NELS M. VALERIUS:

It is perhaps early to review Mr. Kormes' paper before both parts have been presented, but the following discussion is directed to the history of *the experience rating plan as applied to workmen's compensation risks,* which is included in the first part.

Mr. Kormes has presented a comprehensive paper on a subject rather neglected in the *Proceedings.* It was to be desired that someone well acquainted with the theory and practice of experience rating, as is Mr. Kormes, should present such a paper.

The history of experience rating plans in compensation is almost exactly coextensive with the history of this Society and members had a very large part in molding the plans from their beginnings to the comparatively stable forms of the present. Nevertheless, a complete story of the development or indeed a statement of the status at any one time in all rating jurisdictions cannot be gleaned from the *Proceedings,* if we except May, 1916, when Mr. Woodward outlined the status in a paper on experience rating.

Early Plans

I shall use the headings of the paper for convenience of reference.

Under the heading *Early Plans,* Mr. Kormes has described very briefly the plans originating before 1918. The plans in mind were presumably the National Workmen's Compensation Service Bureau's Plans A and B (also C, the employer's liability plan) the Compensation Inspection Rating Board's (New York) 1915 and 1916 plans, and the Massachusetts Rating and Inspection Bureau's 1916 plan, the plans numbered I, II, III, VI, VII, and XIV, respectively, in Appendix I of the paper. There were, no doubt, other plans of experience rating proposed for compensation and at least one more in official operation. Mr. Woodward,

in the paper mentioned, described a plan used in the state monopoly of Ohio, which was different from the present one in Ohio described by Mr. Kormes. In the discussion of that paper, in October, 1916, Vol. III, Pages 54-57, Dr. Downey described a Pennsylvania plan which determined the modification of manual rate on the basis of the hazard of the more common accidents alone (later amended to include death at a low value) and contained "an ingenious device" whereby the plan would always be in balance so that the total premium foregone on credit risks would be equalled by the extra premium for debit risks. The plan was retrospective and the credits and debits were dependent on the risks' deviations from the realized loss ratio of the whole business in the state, whereby the balance could be achieved. This plan was finally rejected soon after, without becoming operative. Another proposal by Mr. David S. Beyer contemplated experience rating on the basis of accident frequency.

The brief description (Pages 83 and 84) fits best the 1916 or "A" type plans, those of the Service Bureau, New York, and Massachusetts (I, VII, and XIV of the Appendix). By reference to the synopsis on Page 116, it will be seen that the Service Bureau's second or "B" plan, while otherwise following the "A" form closely, deviates in its determination of the modification for the hazard of Fatal and Permanent Total losses, so that the remarks under (c) *Neutral Zone* and (d) *Credits and Debits* do not apply to that part of the plan.

Mr. Kormes has made an exception for the New York 1915 plan under (c) *Neutral Zone*. Since it had no neutral zone, the remarks under (d) *Credits and Debits* do not apply either. The debits and credits were, however, determined as first degree functions of the loss ratio in this plan also, in fact they were read from straight line graphs (reproduced in Vol. I, Pages 236-238).

It is interesting that this first New York plan, in effect soon after the inception of workmen's compensation, provided for using employers' liability experience, the data reported being the number of injuries by kind and the payroll. It seems to be the first formal plan of experience rating in the field although risk experience had been used before to justify special rates.

Under the heading (a) *Experience Period*, Page 83, one exception might be noted. The New York 1916 plan set no maximum limit to the experience period. This did not become a practical

difference, however, since the printed plan contained not only its effective date but also its date of expiring, six months thence, which precluded the use of much more than the minimum experience. (After this trial period, approval was extended six months more). Other early plans were similarly approved for definite periods, in contrast to the usual practice of making rules effective indefinitely from some date on.

Under the heading (b) *Qualifications*, Mr. Kormes says all the plans had some minimum size requirement as to payroll, premium, or both, developed during the experience period. I do not know of a plan at that time that had a premium requirement only, and I believe this reflects a prevalent impression that the number of lives exposed was the most important credibility or qualification criterion. In the discussion evoked by the paper of Mr. Woodward, Mr. Senior stated that the New York 1916 plan's requirement (and the Service Bureau plan was almost identical) contemplated 100 man-years as the qualifying point. Presumably this referred to the manufacturing risk payroll requirement of $100,000; the requirement of only $50,000 for contracting risks must have been in part a recognition of the greater accident hazard, though probably also in part a concession for the absence of schedule rating.

Under the heading (d) *Credits and Debits*, Page 84, r, the actual risk loss ratio must be understood to be less than r_1 for formula (1) to be applicable and to be greater than r_2 but less than 100 for formula (2) to be applicable. For loss ratios of 100% and over, the maximum debit applies. In the Massachusetts 1916 plan (Page 124, Volume XIV) the formulas are not immediately recognizable; the debit formula is only approximated by a slightly simpler form.

A question presents itself about the Massachusetts plan: How was 4/7 hit upon as the appropriate fraction of the sum of analytic and experience modifications to be effective?

Without exception, the plans of this period have been well described in the following words: "These were empirical expressions of underwriters' judgment and did not rest upon any reasoned analysis according to the laws of probabilities." Nevertheless, they had a fair amount of unity in the range of the modifications produced for, say, a risk of $1,000 annual premium, particularly if the addition of schedule rating in the modification of manu-

facturing risks were considered to offset the greater swing of the experience plan for non-schedule rated risks.

An important event of this period was the hearing before the New York Insurance Department on experience rating in 1916. Optional application of experience rating was not provided in any plan thereafter, but it is probable that latitude continued in the less regulated states for some time. In 1917 the New York Insurance Department withdrew approval of experience rating, which action brought to a head the unsatisfactory situation and led to the fundamental investigation of 1918 and establishment of the theory of experience rating.

1918 Plan and the Basic Principle of Experience Rating

As Mr. Kormes has stated, the 1918 plans or "D" type reflect thorough consideration of the subject by leading actuaries in the light of theoretical and practical considerations, and the heading of this section emphasizes the fact that the mathematical forms then evolved remain the basic principle. The statement in the plan presenting the new theory in contrast to the old may therefore be quoted:

"The charges and credits under the Plan result from the application of the theory of probabilities to the comparative evidence of the classification experience and the individual risk experience. There are no maximum debits or credits; there is no neutral zone, nor does the Plan involve the use of loss ratios. These elements have been superseded by a new formula for experience rating, which automatically graduates the debits and credits in accordance with the size of the exposure and the degree of hazard represented by the risk experience."

The footnote on Page 85 credits this investigation and the resultant plan to the "National Council Reference Committee". It was the National Reference Committee on Workmen's Compensation Insurance, representing the types of carriers and operating under the combined auspices of Insurance Departments and Rating Bureaus; the National Council had not yet been formed.

The "D" type plans are numbered IV, VIII, XV, and XIX in the Appendix.

It should perhaps be said parenthetically that the rating plans applying in the territories of certain administrative boards and

bureaus at a given time have at least a general likeness because of cooperative accord existing. The independent bureaus and boards cooperating with the National Workmen's Compensation Service Bureau in 1918 in the matter of experience rating were Massachusetts, New Jersey, and New York. Later bureaus of California, Minnesota, Virginia, Wisconsin, and the Texas Commission have cooperated with the Service Bureau and its successor in compensation rating, the National Council on Compensation Insurance. In several of the states concerned, the National plans have been used with exceptions inserted. The Pennsylvania and Delaware bureaus, practically identical, allowed the "B" plan in their territory but have otherwise been independent. The state monopolies have always been independent.

To return to the 1918 plan: among the reasons cited on Page 84 as provoking the new plan is the statement, "Small risks, where there were no losses or very small losses, received credits although the occurrence of a loss was hardly expected in connection with any particular risk having such small exposure." This statement seems rather strong as applied to the immediate predecessors of the "D" type plans, since the premium qualification was not greatly changed with that plan. The objection was perhaps not so much to the small size of the risk as to the range of the modifications on small risks. In fact, it was stated that a minimum size was specified in the new plan only as an administrative provision to avoid rating the smallest risks, whose modifications would be unimportant under the new plan of graduated credibility.

On Page 87 the New York Table "A" is reproduced. The second column would better be headed "Indemnity" than "All Other and D. & P. T. D.". The New York Plan, after defining "All Other" to mean medical losses and indemnity losses except Death and Permanent Total Disability indemnity, erred in using "All Other" in this one place in the sense of indemnity other than D. & P. T. D.

On Page 88 the treatment of special catastrophe elements in rates is mentioned. Not only New York but also the other cooperating states, Massachusetts and New Jersey, set aside the catastrophe element in rating and added it back unmodified to the modified ex-catastrophe portion at the end, which procedure was later adopted for the National plan 1920 (Page 89). A simi-

lar procedure is at the present time being proposed with respect to occupational disease elements. The statement is made that New York, after March 5, 1919, excluded the Table "C" classes. These were again rated under the previous rule starting April 18, 1921, and remained in New York plans until December 1, 1934.

THE ORGANIZATION OF THE NATIONAL COUNCIL ON COMPENSATION INSURANCE AND THE 1920 EXPERIENCE RATING PLAN

Synopses of the National Council plans are not given in the Appendix, hence the only plans listed there which are related to this heading are IX and XI, the New York and California plans. I consider, however, that the first California plan is better described as a "D" type plan. Massachusetts and New Jersey this time used the National Council plan with special rules and exceptions inserted.

Under (d) on Page 89, Mr. Kormes states that self-rating was not adopted in many important states. I believe the rule was adopted in all the states where the "Industrial Experience Rating Plan—1920" or a similar plan was adopted except New York. Massachusetts set $120,000 and New Jersey $100,000 subject premium as the self-rating point rather than $80,000. Pennsylvania's plans included self-rating provisions since 1919.

The 1920 plan developed a defect in practice in that small risks were given heavy charges from the presence of single costly injuries in the experience, and a rule was adopted in certain states but never appeared in the manual that the amount of loss used be limited so that no single case should have over 20% effect on rate.

The following brief, December 17, 1920, of the California Inspection Rating Bureau's Rating Committee for their proposed plan is of interest because of the comments on contemporary plans:

MEMORANDUM RE: PROPOSED EXPERIENCE RATING PLAN FOR CALIFORNIA.

In accordance with the resolution adopted by the Bureau, the Classification and Rating Committee undertook the preparation of an experience rating plan for California. The Committee had before it similar plans in use in the States of New York and Pennsylvania, as well as the plan adopted by the National Council and recommended for use in California.

The National Council plan is substantially the former Plan "D" of the National Workmen's Compensation Service Bureau. The two main differences being, first, the introduction of an additional constant in the numerator and denominator of the formula for determining the credibility factor for the "All Other" portion of the premiums. This modification of the formula has a tendency to increase the credibility of the experience of small risks, allowing greater credits or debits for good or bad experience. Second, the introduction of an arbitrary stop limit beyond which the experience rate is not obtained by formula, but is determined by loading the actual risk losses for expense.

The New York plan follows that of the National Council in principle, and differs materially in only one respect, namely, there is no automatic stop limit and the formula treatment continues irrespective of the size of the risk.

The Pennsylvania plan is materially different from the plan of the National Council. It is what is known as a "no-split" plan, in that there is no division of the premium or losses between death and permanent disability on the one hand, and "all other" on the other. Further, the Pennsylvania plan excludes the entire experience of the policy year preceding the one for which experience rates are promulgated, and requires the valuation of indeterminate cases to be made by application thereto of a table of values for such cases. The Pennsylvania plan is like the National Council plan in providing an automatic stop limit beyond which the rates are based entirely upon the experience of the individual risk.

The plan recommended by the Classification and Rating Committee follows in principle the plan recommended by the National Council. It is a "split" plan, although there has been added to the death and permanent disability division of the split other permanent disabilities rated at 70% or more. This addition has been made on the theory that such cases are just as infrequent and of as great severity as the deaths and permanent total disabilities. The division of the premium into two parts is made for the purpose of minimizing the effect of shock losses upon the rates of an individual risk. The Committee believes that this result is better accomplished by treating pension cases as shock losses.

The Committee has not adopted the modified formula of the National Council for determining the "all other" credibility factor but has adopted instead the formula of plan "D", which was the predecessor of the Council plan. This action was taken because the formula of the Council violates the mathematical theory underlying experience rating, which was developed by Professor Whitney. It arbitrarily increases the credibility of the experience of small risks, which, in the judgment of the Committee is unjustifiable.

The recommended plan does not contain an automatic stop limit, because, again, this is contrary to the theory upon which the plan is applied to small risks. To say that the rates for a risk of given size should be made entirely upon their own experience is to deny the correctness of the formula and to question the soundness of experience rating.

The Committee adopted the feature of the Pennsylvania plan, which excludes experience for the policy year preceding the one for which the experience rate is promulgated, for several reasons. In the first place, this action obviated the necessity of a payroll audit within the policy term. In the second place, it permitted a longer development of the loss experience, thus rendering that element in experience rating more dependable. Lastly, it permitted the Bureau more time in which to secure information for experience rating purposes, and in which to promulgate the rate. It seemed highly desirable that experience rates should be promulgated in advance of renewal, and realizing the magnitude of the task before the Bureau, the Committee felt that this was perhaps the most important reason for excluding the experience of the current policy period.

The Committee adopted the plan followed in Pennsylvania and New Jersey of requiring open cases to be valued according to an indeterminate table, because it was realized that any method based upon estimates of outstanding losses would involve the personal equation and would not be satisfactory.

The constants which are used in the formulas for experience rating are higher than recommended by the National Council, because after tests made by the Insurance Department they seemed to give the proper maximum credit departures for both large and small risks qualifying under the plan.

The experience period was set at three years, because it was felt that experience prior to policy year 1917 would not be indicative of present day conditions.

The minimum qualification for experience rating was set at $1,500.00 for the experience period with provision that at least one year's experience must be available. This qualification was determined after consideration of the number of risks which would have to be experience rated, as well as the probable results of applying the plan to smaller risks. ($1,000 was finally selected as the qualifying premium - note.)

While the recommended plan is obviously not the plan proposed by the National Council, it follows the principle of that plan, the variations being primarily intended to make it workable under California conditions, particularly those which will be experienced upon the introduction of a new system of rating. The Committee felt that the actual use of the plan would indicate whether or not it was desirable to follow more closely the plan of the National Council, but that prior to such actual use the recommended plan would be more satisfactory.

1923 Plan — 1928 Plan — Present Plan

The 1923 and 1928 plans of National Council and cooperating states revert to the 1918 plan in mathematical form with one important practical change, the division of losses, "split," is not by kind (D. P. T. and Other) but on a deductible average basis (Normal and Excess). This has the effect of discounting every loss of major size, including medical, and not only D. and P. T. indemnity as formerly. Another important and related feature is the limitation in size of single losses and the calculation of K values in such a way as to incorporate automatically the limitation of the effect of a single maximum value loss to 20% for a risk of $1,000 subject premium, replacing the stop loss rule.

The presentation of this section of Mr. Kormes' paper does not enable the reader to trace developments from 1923 or distinguish the two plans. This is no great defect to Mr. Kormes' purpose, however. A complete statement of the nature of the 1923 plan, its differences from its predecessor, and the considerations underlying the change can be found in Mr. Hobbs' "Report Relative to the National Council on Compensation Insurance made to the National Convention of Insurance Commissioners, April 14, 1924." The principal developments from that time can be followed in similar Reports made by Mr. Hobbs from time to time.

Pages 90-105 inclusive, are largely a paraphrase of the Council's present plan with statement of exceptions in the various states and do not invite much comment from the point of view of this discussion. Another practical difference between the 1920 and 1923 plans might be added to that on Page 98. The comparison of indicated and expected results is on a loss basis whereas previously it was on a premium basis. It was argued that the assured finds the final result more reasonable if he sees his losses (modified to latest basis, however), compared to expected losses than if an "indicated" premium is calculated by application of large factors to his losses and then not followed but allowed to be influenced by a "subject" premium.

Other States

This section is one of the most interesting features of the paper. The plans of the state monopolies have never been made available in one place before to my knowledge. They seem to be without exception not comparable in advancement to the plans devoted in rating bureaus through cooperation of private carriers. Probably the state monopolies have to be even more chary than private carriers of the appearance of discrimination which credibility may have.

In conclusion, I add a few comments on Appendix I and Chart I. It is not likely that either Mr. Kormes or the writer is correct in all statements that involve the many and short-lived details of so many plans. Moreover, some items, as effective date, have not had the same exact meaning throughout the time.

Page 115 I—Plan A

1. Experience Period: add "including 9 months of current policy."
5. Principle of Calculation: C. Maximum debit 20% for Schedule rated risks.
   25% for Non-Schedule rated risks.

Page 117 III—Plan C

This was not the earliest Employer's Liability experience rating plan of the Service Bureau but perhaps the earliest printed

one. Inasmuch as it applied to New Hampshire compensation as well as liability experience, it is in order here.

Page 118 III—Plan C

Formula, top of page, should be $\frac{r-55}{45} \times 40\%$.

As in Plans A and B, the 40% maximum credit for combined schedule and experience rating applied.

Page 120 VI— Just above middle of page, under head "Over $100,000 payroll," 85% should be substituted for 80%.

Page 121 VII—2. Qualification: Add "and public service" after contracting.

5. Principle of Calculation:

$$\text{Maximum Debit or Credit} = 5 + \frac{\text{Premium} - 500}{300}$$

Page 122 X—2. Qualification: Original qualification was $1,340 premium at latest manual rates over experience period or $335 average annual premium over last two years. These amounts were changed to $1,500 and $375 respectively January 1, 1925; to $1,650 and $825 (for sum of last two years) June 30, 1925; to $1,600 and $800 for two years on May 1, 1928; and to the present as given by Mr. Kormes on January 1, 1933.

Page 126 XIX—1. Experience Period: 3 months current policy not 4.

Page 127 XX—2. Qualification: It may be noted that the many changes represent an effort to keep experience rating in force upon the same body of risks despite changes of general wage and rate level. At 6-30-1935 the amounts become $900 and $450, respectively.

Nos. XVI and XXIII do not indicate separate plans as do other numbers.

Chart I—New Hampshire—Plan C to 8-1-1921
1920 Plan 8-1-1921 to 7-1-1924
(However, the 1920 plan was modified for New Hampshire use and is so changed as to be in effect another plan.)
New Jersey—7-4-1923, not 7-4-1924.
Ohio—Plan A applied 10-1-1916 to 8-1-1917 for private carriers.
Vermont—Transition from 1918 to 1920 Plan 2-1-1921 not 12-1-1920.

AUTHOR'S REVIEW OF DISCUSSION

MR. MARK KORMES:

The author is greatly indebted to Mr. Valerius for his painstaking review of the paper in which he has brought out many details not quite clearly set forth in the paper.

Mr. Valerius' discussion is particularly valuable from the historical point of view since he mainly refers to the early plans and has had access to material concerning such early plans not available to the author.

The contents of Appendix I and Chart I are based, as stated in the paper, on compilations made by the Aetna Life Insurance Company and a large portion of this work was carried on by Mr. Valerius over a considerable period of time so that the author gratefully accepts all additions to and modifications of the various statements concerning the early plans.

The author's broad characterization of the early plans in the main body of the paper was not intended to fit every single one of the early plans but to bring out the most characteristic features and principles which were in effect at one time or another in practically all of the states having experience rating.

The author appreciates particularly Mr. Valerius' corrections relative to the information contained in Appendix I and Chart I. The considerable amount of material and the limited time allotted for a check-up of typewritten text and galley proof account for some of the omissions and inaccuracies.