ABSTRACT OF THE DISCUSSION OF PAPERS READ AT THE PREVIOUS MEETING

FEDERAL *VS.* STATE SUPERVISION OF INSURANCE

RAINARD B. ROBBINS

VOL. XXV, PAGE 313

WRITTEN DISCUSSION

MR. ERNEST R. BERKELEY:

Mr. Robbins' paper is a very welcome addition to the *Proceedings* of the Society because it gathers together in one place and presents in a logical manner numerous scattered facts connected with the development of state supervision of the insurance business and the agitation for Federal supervision, beginning about 1850 and running up through recent times. It is particularly interesting at this time on account of the attempts of the Federal government, in the past few years, to bring under its control many types of business enterprises.

Mr. Robbins points out that in many states the principal interest of the insurance department in the insurance business has been the collection of taxes. On the other hand, the necessity of supervision over the companies for the protection of the insuring public was recognized as long ago as 1858 by Elizur Wright who was one of the two commissioners of insurance appointed in that year in the State of Massachusetts. He felt that policyholders should be able to rely on the promises made in their policies and he did everything possible to bring this about. It is very likely that this opinion was responsible for his favorable stand on nationalizing insurance in 1865. There followed a growth in sentiment for Federal supervision among state insurance commissioners, legislators and company executives which reached a peak between 1900 and 1910. Its decline since that time has been due to adverse court decisions, the fear that Federal supervision would not replace state supervision but would probably be added to it, and doubt concerning the character of National control.

I had hoped that Mr. Robbins would comment on the Congressional investigation of life insurance which began in February, 1939, but probably his paper was completed before that time. This

inquiry resulted from President Roosevelt's message to Congress in which he said, in part, that "the tremendous investment funds controlled by our great insurance companies have certain kinship to investment trusts in that these companies invest as trustees the savings of millions of our people. The S.E.C. should be authorized to make an investigation of the facts relating to these investments with particular relation to their use as an instrument of economic power."

The Temporary National Economic Committee, better known possibly as the anti-monopoly committee, was charged with this undertaking under the chairmanship of Senator O'Mahoney. Many executives of life insurance companies have been questioned and many phases of the business examined. Public hearings were concluded in June, 1939 and a preliminary report was made to the President in July without any recommendations. The investigation is still proceeding in connection with certain specific problems.

At one time during the proceedings Chairman O'Mahoney said that "nothing has been presented to the Committee or the S.E.C. which should give any policyholder the slightest concern and the Committee feels that life insurance assets are such as to indicate that policies are well based." At another time, however, the Chairman raised the question as to "whether it would not be better for policyholders and insurance companies if we had one national system to handle what is obviously a national business."

The implication in these remarks is brought out clearly by Mr. F. H. Ecker, Chairman of the Board of the Metropolitan Life Insurance Company, who has remarked that since the investigators have repeatedly emphasized the soundness of life insurance, the only inference that can be drawn is that the Federal inquiry is aimed not so much at determining whether the business is functioning in the public interest, but at bringing about some form of Federal control or supervision.

The opinion of one insurance commissioner on this point is expressed in an address made before the Association of Life Insurance Presidents in the latter part of 1938 by the Hon. Frank N. Julian, Insurance Superintendent of Alabama and President of the National Association of Insurance Commissioners, who advocated the continuance of the present system of state supervision and deplored the possibility of Federal control with its

multiplicity of rules, regulations, civil service employees and unexpected interference.

The latest development in this situation, and one which affects the casualty business directly as well as all other insurance interests, is the implied threat of Federal supervision in the questionnaire which has just been sent out by the S.E.C. to all insurance commissioners asking for information on the statutory requirements for eligibility to the office of commissioner, business experience before and after commissionership, methods of conducting examinations, etc.

The final result of this investigation is not yet in sight but unless there is repudiation of the principle that insurance is not commerce, which supports the decision in the case of Paul *vs.* Virginia and subsequent decisions of a similar nature, it seems fairly certain that the various states will continue to exercise substantial control over the insurance business for some time to come.

Probably very few of us object to the general principle of regulation and supervision. Differences of opinion occur chiefly in connection with the nature and scope of these functions and their effect on the ability of companies to continue doing business and make a reasonable profit.

There appears to be little justification for Federal supervision. Certainly state supervision has been successful enough if one may judge by the events of the past, and as to the companies, it must be admitted that they have furnished invaluable protection to millions of policyholders and have saved many lives and much property through accident prevention work.

In conclusion, it is quite clear that the prevalent opposition to Federal regulation is based on the fear that the insurance business would suffer the same fate as other businesses over which the Federal government has recently gained regulatory control.

MR. RUSSELL O. HOOKER:

In his timely paper Dr. Robbins has given us an admirable analysis of the legal foundation underlying state supervision, and there would appear to be little of value which one could add along the same line. I would like, therefore, to confine this discussion

to a few observations regarding the functioning of state supervision, with particular reference to its role in our democratic philosophy of government.

Probably the most potent factor in shaping the characteristics of state supervision in recent years has been the National Association of Insurance Commissioners. This Association, representing all sections and voicing all local viewpoints, has nevertheless made remarkable progress toward uniformity of supervision. As a result it can be said that the supervision of insurance operates today on a national scope and yet remains thoroughly in touch with local problems and conditions.

The Committee on Blanks of the National Association of Insurance Commissioners, which the author briefly mentions, is an excellent example of the manner in which that organization combines many viewpoints to obtain an effective solution to important problems. This Committee is truly national in scope and any state can obtain representation thereon. The suggestions made for changes in the various Convention blanks are published on agenda before each meeting for the benefit of all interested parties, and are considered strictly on their merits regardless of source. Many company men attend the meetings and their views on each suggested change are duly weighed by the Committee in making its decision. Each year the Committee presents its report for action by the Executive Committee of the N.A.I.C. and the changes adopted are duly reflected in the Convention annual statements returnable to the various states as of the end of that year. This procedure has resulted in remarkable uniformity of requirements as between the states, and in the constant modernization and improvement of the blanks in conformity with the changing trends and practices of the business. That a committee of this sort could only function under state supervision will, I think, be taken for granted.

Federal supervision would mean a highly centralized form of insurance regulation. We know what centralization has done to business in the last several years. If state supervision were not effective, a good argument might be advanced for trying federal supervision, but state supervision has been remarkably effective. The fact that so few insurance companies failed during the depression speaks volumes for state supervision. Centralized super-

vision of the national banks did not prevent many national banks from closing. If it be argued that federal supervision would make for uniformity of regulation, the answer could be made that state supervision is becoming more and more uniform as between the states each year, due to the operation of the National Association of Insurance Commissioners. If in the past the requirements and standards of some states left something to be desired, this situation is being rapidly corrected through co-operation on examinations and greater uniformity in laws and regulations.

State supervision is the democratic and American way. It represents one of the few rights that the states still possess. It is democratic somewhat in the sense of the town meeting of New England tradition. The towns are excellently managed under the town meeting system, and the average citizen of a New England town would fight fiercely for its retention. It might be argued that centralization of government would be helpful to the town, in that less time would be required than is consumed by the town meeting method of carrying on the town's affairs, but one has only to recall the recent scandals involving some of the larger communities, where control of the public business was centralized in the hands of a relatively small number of persons, to become convinced that centralization of government, while impressive in theory, does not always work for the public good.

State supervision has successfully met the pragmatic test, to use the author's phrase. Under it the rapidly expanding and ramifying business of insurance has been wisely supervised and kept financially sound through periods of prosperity and depression alike. While it may lack the elegance of the streamlined structure which some fertile minds have conjured up to replace it, yet its record of accomplishment points to the logical conclusion that it should be retained and perfected rather than scrapped in favor of an unknown quantity.

MISS EMMA C. MAYCRINK:

This Society and all who are interested in the business of insurance are indebted to Mr. Robbins for his timely paper on the subject of Federal *vs.* State Supervision of Insurance. He has given a resumé of legal decisions which have interpreted the

Constitution beginning with the decision of Paul *vs.* Virginia that insurance is not commerce and therefore Congress under Sec. 8 of Article 1 of the Constitution of the United States has not been given the power to regulate the business of insurance and in the absence of such express power the States are left free to regulate insurance.

Mr. Robbins says . . . "if there is anything *judicially* certain in our ever changing business life it is the dictum of Mr. Justice Field in Paul *vs.* Virginia that, strange as it may seem, *insurance is not commerce.*"

In contrast to the solidarity evidenced by the court decisions, the opinions of prominent men some of which Mr. Robbins has quoted show that these men and the companies they represent have been at variance with the courts, with each other, and finally with their previously expressed ideas.

It will be of interest to students of insurance and in fact of government to read the references Mr. Robbins has given and also the ideas published in more recent times noting chronologically the gradual change in the trend of thought from demands for federal supervision, then away from it, and perhaps in present times back to playing with the idea of federal supervision as a panacea for the ills of state supervision.

Briefly, the burdens mentioned by the protagonists of federal supervision appear to have been taxation, interference with the companies' business and conflict of the various state laws and state regulation. The burdens of taxation persist and have grown more burdensome but this is true of other kinds of business whether supervised by the States or the Federal Government. The question of taxation merits a paper on that subject alone.

Mr. Robbins has quoted principally from the life insurance field. Other classes of insurance were also voicing protests. Mr. Henry E. Hess, manager of the New York Fire Insurance Exchange in an address in 1904 before the International Congress of Arts and Sciences spoke of the "shameful burdens of local taxes, forced loans, examinations, deposits and licenses, legislative subsidies, compulsory advertising and state, county and municipal fees." He said that while the ostensible purpose of the creation of insurance departments is claimed to be the protection of policyholders, state supervision is but a device for taxation and only a small

part of the sum collected has any relation to proving the solvency of companies. Mr. Hess advocated the establishment of a national insurance department for companies doing an interstate business and adds the somewhat naïve thought that it would not be necessary that every insurance company be required to join but might place themselves under such supervision if they chose to do so.

In 1906, there was a model law drafted for the District of Columbia with general provisions for casualty companies. The executive committee of the Board of Casualty & Surety Underwriters sponsored these laws.

The American Life Convention at an organization meeting at Chicago in 1905 went on record in the following resolution, ". . . We are opposed to any interference with state supervision and control of life insurance companies that federal supervision is not expedient and we believe unconstitutional and under present conditions we are opposed to it, we endorse strict state supervision."

It is evident that the tide had turned. What had happened in the interim? Mr. Robbins has mentioned the National Convention of Insurance Commissioners and its influence upon legislation. We are all familiar with the work of this organization which has stood for uniform accounting and reports of insurance companies, uniform valuation of securities and in the past the examination of companies by home States with only occasional joint examinations.

In addition to the work of National Convention of Insurance Commissioners, the companies themselves organized numerous associations and bureaus for each class of business. All of these organizations worked towards uniformity in laws, rating methods, acquisition costs and the other multifarious phases of the insurance business. The interchange of ideas and not always harmonious deliberations served to bring about at least working agreements between the companies and the supervising authorities of the different States. If we consult the record of growth, all lines of insurance increased tremendously during this period.

Coming down to the present, the views expressed upon this controversial topic may be read in our insurance publications. In 1935 the Weekly Underwriter commented upon reports from

Washington that it is proposed to bring insurance companies under the domination of the Federal Government. It says that insurance needs no apologies and is not on the defensive and refers to the record of performance during the time that the banks on the Federal Reserve System closed their doors. Another publication, the Insurance Index, says that federal supervision merely places an additional burden on the companies and is unnecessary and not wanted. It is regarded as an expensive superfluity. It would seem that the dire prophecies of the Jeremiahs of the earlier years have not been fulfilled.

Today the Federal Government is interested in insurance. Investment portfolios of the companies are being scanned. Questionnaires are being sent out which are formidable documents to read much less to answer.

The various compulsory social security enactments of old age security, unemployment and health would indicate that there is a possibility of the Federal Government not only taking a hand in supervising but actually taking over a large part of the business heretofore provided by the insurance companies.

In view of such activity, one can hardly agree with Mr. Robbins that "there is no well defined interest in federal supervision, there is no hope of avoiding state supervision, there is no hope of limiting the freedom of each State to tax the business as it sees fit."

The Journal of Commerce about a year ago in an editorial entitled "Inviting Federal Supervision" commented upon the subject. The tax question was referred to as burdensome and it said . . . "the demands of insurance commissioners of many States that examinations of insurance companies be made by representatives of groups of States, instead of by the State of domicile when no real question of solvency is involved are creating discord among commissioners and great dissatisfaction among companies.

The group examinations system involves a marked increase in the cost of examinations. This tendency of the States unnecessarily to burden and annoy insurance companies and, for the benefit of the favored few, add to the expense which insurance has to pay for protection, is causing the companies to think seriously of the advantages of federal supervision."

Can it be that the cycle is complete and after almost a century of progress in insurance the irritations of taxes with conflicting

and retaliatory regulation are returning and once more will be heard the complaints of "unintelligent and oppressive supervision"?

AUTHOR'S REVIEW OF DISCUSSIONS

MR. RAINARD B. ROBBINS:

Unfortunately for unbiased discussion, interest in this subject has usually been either almost nil or intense. Certainly it cannot be considered to advantage in vacuo. When this paper was originally prepared little interest in the subject was in evidence, and yet, as Miss Maycrink points out, in the face of the present activity of federal agents my statement that "there is no well defined interest in federal supervision" is open to question. The authors of all three of the discussions of this paper show clearly their disapproval of federal supervision. These views are in harmony with all that the writer has seen expressed in insurance periodicals by others in the insurance business. The insurance business seems to be united today in the conviction that Federal supervision should be avoided.

Defects in state supervision are recognized, but much credit is given to the National Association of Insurance Commissioners for its efforts to bring about uniformity by mutual consent through compromise from all. Without doubt the N.A.I.C. has done much during the seventy years of its existence, but the fact remains that difficulties which it has not yet been able to eliminate and which flare up somewhat periodically to the chagrin of ardent advocates of state supervision may prove to be valuable ammunition for those who contend that supervision should be national. Unfortunately it must be admitted that insurance supervision is seriously defective in some states and that undesirable corporations have at times been operated nationally from such a state of domicile to the detriment of citizens of various states. This is a point at which state supervision is vulnerable and its critics capitalize on this defect, even though they can only surmise that federal supervision would correct it.

The popularity of federal supervision shortly before the Armstrong investigation was a protest against some characteristics of state supervision that were causing trouble at that time. The

intense opposition to federal supervision that is so frequently expressed today seems to reflect at once a clear-cut opposition to some of the tendencies toward nationalism that are so evident in this country today and a fear that, unless strenuously opposed, these tendencies may prove to be distinctly harmful to the insurance business and the insuring public. If this new nationalism had the wholehearted support of those carrying large responsibilities in our capitalistic society the defects of state supervision of insurance might loom larger than the fear of federal interference, but experiences of the past few years have left business organizations in no mood to encourage the extension of federal control. The discussions of this paper give evidence of an unnamed dread that "makes us rather bear those ills we have than fly to others that we know not of."

If there is any one lesson that the insurance business should have learned from its experiences in recent years, and likewise from its experiences in the years before the Armstrong investigation, it is that frank, severe, and continual self-examination is the best safeguard against any just criticism from others. Too often the insurance business has suffered from its own success. Prosperity has blinded company officials and supervisory officials to fundamental weaknesses in business methods. Witness, for instance, the union of title and mortgage guarantees. Long-continued success in periods of prosperity, with corresponding growth of salaries for company officials, has, at times, quite unintentionally, intimidated state supervisory officials. Men have come to feel that they have vested interests in methods of conducting the insurance business on the ground that their efforts have developed the business. Humility has its virtues in corporate dealings as well as in the private lives of individuals.

The insurance business has developed to serve the insuring public. Just so long as this is kept in mind, and no longer, can the business prosper in comfort. This attitude must be evidenced by works,—not by lip service. The needs of the insuring public are ever-changing. Insurance service must change with these changing needs, and he is bold indeed—and perhaps very short-sighted—who undertakes to tell the insuring public that the insurance business shall follow only orthodox patterns. Forms of insurance organizations, methods of soliciting business, the degree

of self-insurance, the groupings of insurers—all these refuse to remain static; and the insurance organizations that resist this constant evolution are bound to be overcome in the long run, and in the meantime they constitute a heavy load in public relations that must be carried by the more public-spirited elements in the business.

The slogan of our sales psychology is "Be a booster." Stretch the truth if necessary to be complimentary, but if you can't be optimistic, be still. There was no room for a critic in our prosperous days, and the insurance supervisor whose sense of duty tempted him to question the wisdom of officials with salaries ten times his own usually found another job. The attitude of candid self-examination would welcome the devil's advocate and pay attention to his suggestions. This applies to supervisory officials as well as to company officials, and if this self-inspection were well established, it would probably be the best safeguard against occasional suggestions of cataclysmic changes. The method of trial and error on a small scale has much to recommend it, and surely many of our recent experiences in nationalism should convince us of the wisdom of building the old onto the new rather than razing the old to build in patterns beyond our experience.

STATE MONOPOLY OF COMPENSATION INSURANCE, LABORATORY TEST OF GOVERNMENT IN BUSINESS

PART II

ANALYSIS OF THE RECENT ACTUARIAL AUDIT OF THE OHIO STATE INSURANCE FUND

WINFIELD W. GREENE

VOLUME XXVI, PAGE 130

WRITTEN DISCUSSION

MR. RICHARD FONDILLER*:

In 1936 Mr. Greene made certain comparisons as to the experience by industry groups, between the States of Ohio, New York,

* EDITORIAL NOTE: The Discussions of this Paper appear in the same issue as the Paper itself by request of the members interested.

New Jersey and Massachusetts. He has seen fit to continue his attack on the monopolistic state funds. As far as I am concerned he can attack anything he wants to in the world, even tilt at windmills, as did a famous Don of old. When, however, he attacks the Ohio State Insurance Fund, and on the basis of my surveys and audits, the matter comes closer to home. He is directly and indirectly questioning the soundness of audits and surveys prepared by me in a professional capacity. It is therefore incumbent upon me to make a fitting reply, even if in doing so, I must respectfully point out serious fallacies in Mr. Greene's reasoning, which result in invalidating his conclusions.

Mr. Greene states that I show "no less than five different figures relating to claims incurred for the period 1933-1937 for the Private Fund." The figures referred to are as follows:

Amount	Table No.	Page No.
$52,014,000	18	43
52,124,000	8	23
58,144,000	8	23
73,817,882	9	26
74,825,215	19	45

Mr. Greene continues by saying "It must be admitted that the above figures represent a wide area of choice, ranging from the figure of $52,014,000 appearing in Table 18, to that of $74,825,215 which appears in the very next table, namely, Table 19." He goes on to say "I am going to lean very heavily on the figure of $73,817,882 because this figure appears twice, once in Table 9 and again in the Comparative Statement of Gain and Loss."

The implication that each of the foregoing figures represents the same incurred claims must naturally lead the reader to conclude that there must be something radically wrong with my report. It is unfortunate that Mr. Greene has seen fit to conclude that all these figures relate to the same thing, especially so since each of the Tables referred to carries an appropriate heading.

In order to clear the air of misunderstanding, the following is an explanation of each of the figures:

$52,014,000—Table 18—Page 43

In this table there is shown, by manual classification, the incurred cost of non-catastrophe claims, less interest earned, for

accidents *occurring during the years 1933 to 1937 inclusive.* By "incurred cost" is meant the total amount paid in cash, plus the present value (as of December 31, 1937) of outstanding claims of this same period.

$52,124,000—Table 8—Page 23

This table shows the development of incurred losses *including catastrophe* (claims paid plus present value of unpaid claims). As in the case of Table 18, the accumulated earned interest has been deducted from the incurred cost. It will be seen that the incurred cost of each year is shown by its valuation as of December 31, 1937. The total of $52,124,000, which represents the incurred claims for the years *1933 to 1937 inclusive* is arrived at as follows:

Accident Year	Claims Incurred	Valuation Year
1933	$ 7,401,000	5th
1934	8,910,000	4th
1935	9,516,000	3rd
1936	11,598,000	2nd
1937	14,699,000	1st
	$52,124,000	

This amount also includes catastrophe losses of $401,000, while the item of $52,014,000 in Table 18 excludes catastrophe losses, as indicated. In Table 18, however, there is included in the losses the amount of $289,000 for loss adjustment items not included in Table 8.

The compilation for Table 8 was made from a source independent of that used for Table 18. The purpose of the compilation of Table 8 was to determine the trend in successive valuations, as an indication of the adequacy of reserves established over the various years. In preparing the data for Table 8, subsequent miscellaneous adjustments were not available at the time of the compilation. Table 18 carries all adjustments made subsequent to the compilation of Table 8. The analysis of the two amounts in question, is as follows:

	Valuation as of Dec. 31, 1937	Classification Experience
Non-Catastrophe	$51,725,000	$51,725,000
Adjustment Items	—	289,000
Total Non-Catastrophe.	51,725,000	(B) 52,014,000
Catastrophe	401,000	401,000
	(A) $52,126,000	$52,415,000

(A) = Table 8: Note difference of $2,000 is caused by rounding the figures to the nearest thousand.
(B) = Table 18.

$58,144,000—Table 8—Page 23

This total is not shown in my report. However, the figure is created by Mr. Greene through inflating data for the five year period 1933-1937 to the extent of $6,020,000 by using data of other years back to 1929, as follows:

CLAIMS INCURRED

Accident Year	Dec. 31, 1932	Valution Year	Dec. 31, 1937	Valuation Year
1928	$14,603,000	5th	$15,917,000	10th
1929	17,769,000	4th	19,590,000	9th
1930	15,874,000	3rd	17,339,000	8th
1931	13,045,000	2nd	13,832,000	7th
1932	8,884,000	1st	9,517,000	6th
Totals	$70,175,000		$76,195,000	
			70,175,000	
Increase during 1933-1937 for Five Year Period 1928-1932.....			$ 6,020,000	
Incurred claims of Five Year Period 1933-1937			52,124,000	
Incurred loss for Five Year Period 1933-1937 (Per Mr. Greene).....			$58,144,000	

What Mr. Greene has done here is to add to the incurred cost of claims of the five year period 1933-1937, the increase during the period in the incurred cost of claims for the accidents of 1928 to 1932. This is another of what Mr. Greene chooses to call the "multiplicity of varying figures apparently relating to the same item . . .," but this is an item of Mr. Greene's own creation.

$73,817,882—Table 9—Page 26

This amount represents the incurred cost which was carried into the gain and loss statement for the accounting period January 1, 1933 to December 31, 1937. The figure is arrived at, as follows:

Claims paid (for all accident years) during 1933-1937		$ 64,731,382
Plus: Reserve for Unpaid Claims Dec. 31, 1937.....		47,893,275
		$112,624,657
Less: Reserve for Unpaid Claims—per Ohio Fund Statement as of Dec. 31, 1932.....	$37,799,442	
Add: Adjustment in Reserve for Unpaid Claims as of Dec. 31, 1932	1,007,333 (A)	
Adjusted Reserve for Unpaid Claims—Dec. 31, 1932..		$ 38,806,775
Incurred Cost of Claims—for period of Jan. 1, 1933 to Dec. 31, 1937.....		$ 73,817,882

(A) This amount was added to the Reserve for Unpaid Claims as of December 31, 1932 by Miles M. Dawson in his report on the Actuarial Audit of the Ohio State Insurance Fund, dated July 25, 1933. While this increase affects the incurred claims prior to January 1, 1933, it was necessary (in order to reflect this adjustment in the gain and loss statement) to make this change in the figures of 1932.

$74,825,215—Table 19—Page 45

This figure, which is $1,007,333 (the addition made by Miles M. Dawson) greater than that shown in Table 9, is the incurred cost of claims for the five year period ended December 31, 1937. Since this addition refers to the period prior to January 1, 1933, the *actual* incurred cost of claims for the five year period ended December 31, 1937 totalled to the amount of $73,817,882 as shown in Table 9.

The foregoing figures can be summarized as follows:

A Incurred cost for claims originating in 1933-1937		$52,124,000
B Incurred cost for claims as above..	$52,124,000	
Plus increase for claims 1928-1932.	6,020,000	58,144,000
C Incurred cost of claims originating Jan. 1, 1933 through Dec. 31, 1937 plus developments on claims occurring in *all* prior years.....		73,817,882

Mr. Greene's paper shows numerous other amounts dealing with claims which I will refrain from discussing, since his ultimate conclusion, as regards the solvency of the Ohio State Insurance Fund, has been based on the figures shown in Table 8—

"Development of Incurred Losses by Successive Valuations." From these figures and the results of the application of an elaborate formula Mr. Greene finds that, as of December 31, 1937, the deficiency in reserves for accident years 1928 to 1937 totalled $10,724,820; and, since, according to my valuation the Fund's surplus amounted to $4,340,435, he concludes "if the Private Fund were to liquidate, somebody, the employers or the State of Ohio, presumably, would have to make a contribution of more than $6,000,000."

In my report I stated "the solvency of the Fund is unquestionable; the margin of safety of the statutory surplus is 6.4%; that of the general surplus is 2.1%; and thus the total margin of safety is 8.5% . . ." Mr. Greene and I have both used the same basic figures to arrive at our conclusions. Obviously we can't both be right. Fortunately for the "employers or the State of Ohio" Mr. Greene has erred and I proceed to explain the cause of his error.

In my report, on page 22, I stated as follows: "The estimated reserve for calendar years 1929 to 1935 inclusive, was insufficient for each year, ranging from $124,000 for the year 1929 to $1,429,000 for the year 1930. The necessity for increasing claim reserves for the years 1929 to 1935 inclusive, is due to a number of adverse factors. . . ." From the foregoing it is obvious that I was cognizant of the fact that there *had been* deficiencies in claim reserves. Being aware of this fact, it must naturally follow that, I could not certify to adequacy of the reserves as of December 31, 1937, unless I had previously ascertained that these deficiencies had been provided for and that the current claims were *reserved for on a proper basis.*

Mr. Greene's formula for determining the amount of deficiency is meaningless because it ignores the fact that the reserve bases used at December 31, 1937 were adequate and that all deficits occasioned by the use of inadequate bases in the past had been made good.

As of December 31, 1937, the claim reserves for both deaths and permanent totals were strengthened by the use of 3.5% interest instead of 4%, on all claims where the accident occurred prior to January 1, 1936. As of the same date, the reserves for accidents of the calendar years 1936 and 1937 were valued upon the con-

servative basis of 3%. In my report, on page 15, Table 4 shows that the ultimate yield of *all* bonds was 3.44%. (It should be remembered that death claims and permanent totals, which are the only claim reserves which are required to earn interest to maintain the reserve, constitute about *one-half* of the total reserve.)

Unfortunately, Mr. Greene overlooked my intimation that the reserve basis had been strengthened. This was pointed out on page 20 under the discussion of the death claim reserve, which states "Those reserves which were calculated on the 4% table were, in the final analysis, adjusted to a 3.5% basis."

Mr. Greene has made the serious mistake of incorrectly developing reserves. Knowing him as I do, I would state that I believe sincerely that this was done in error rather than deliberately. I will briefly describe the method used by him and then point out the fallacy.

Mr. Greene takes the incurred losses as of the tenth annual valuation as final. The first valuation is at the end of the calendar year in which the accident occurred and successive valuations are made annually thereafter. Again I want to make clear the definition of "incurred losses." Incurred losses for any given period, at any specific time of valuation, are equal to the sum of the paid losses and the present value of future payments less the interest earned on incurred losses. Thus the incurred losses at the first valuation represent the sum of the losses paid on accidents for that year plus the *present* value of future payments. The second valuation represents the losses paid during the first year plus the losses paid during the second year plus the *present* value of future payments and so on for all subsequent periods.

Using the figures for incurred losses at each successive valuation date, Mr. Greene obtains development ratios, that is the ratio of losses as of the 10th valuation to those of the 9th; the ratio of the losses as of the 9th to the 8th and so on. Since Mr. Greene uses the ten year period 1928-1937 he is able to obtain five year average development ratios for the 1st, 2nd, 3rd, 4th and 5th valuations and 4, 3, 2 and 1 year averages for the 6th, 7th, 8th, and 9th valuations respectively, the tenth valuation being taken as final. By accumulating factors he develops figures to place the incurred losses for the first valuation on a tenth valuation

basis, the second on a tenth, etc. He then applies these factors to the incurred losses as of December 31, 1937, obtaining losses for *all* years on a tenth valuation basis. The difference between his incurred losses on a tenth valuation basis and the incurred loss of the Ohio Fund as of December 31, 1937, represents the so-called deficiency which Mr. Greene creates as of December 31, 1937. For the latest five years 1933-1937, Mr. Greene says the deficiency is $7,685,000; similarly for the latest ten years 1928-1937 he says the deficiency is $10,765,000.

The procedure for determining reserves which Mr. Greene has followed is quite fallacious, in that he has entirely overlooked the fact that incurred losses must normally increase from one valuation date to the next because of the placing of unpaid losses on a present value basis, and adding the paid losses to obtain total incurred losses. Surely Mr. Greene must be aware of the phenomenon of consistently increasing incurred losses from one valuation date until the next. He is probably aware of the special call issued in March, 1939 by the Actuarial Committee of the New York Compensation Insurance Rating Board to determine the accretions which result from successive revaluations of cases. He is also probably aware of the action in March 1939 of the Actuarial Committee of that Board eliminating $8,486,502 which was the increase in incurred losses estimated as due to revaluation of cases, plus $657,916 for interest on reserve developments, thus transforming an accumulated underwriting loss of $5,956,950 for the calendar years 1933-1938 to a profit of $3,187,468. He is also probably aware of the action of the Superintendent of Insurance of New York approving this adjustment and also approving the July 1, 1939 rates based on this procedure.

There is available for those interested in the matter an able explanation of the whole procedure by Mr. James M. Cahill, Actuary of the New York Compensation Insurance Rating Board, which is contained in this number of the *Proceedings*.

Mr. Cahill's paper is entitled "Contingency Loading—New York Workmen's Compensation Insurance." I am going to take the liberty of reproducing Mr. Cahill's explanation of the manner in which incurred losses develop from year to year due solely to the effect of adding the present value of future payments to the previously paid losses. (It should be understood that the

table below is merely illustrative, because it deals only with a single life. The important part which mortality plays cannot be readily shown with a single life). Mr. Cahill's Table 4 follows:

ILLUSTRATION OF DEVELOPMENT OF INCURRED COMPENSATION LOSS FOR A PERMANENT TOTAL CLAIM

Assumptions: (1) July 1, 1934 date of accident in policy year 1934.
(2) $30 weekly wages; $20 weekly compensation benefit.
(3) Date of birth December 31, 1894.

Valuation Date	No. of Months Development of Policy Year	Compensation Loss			Increase in Incurred Loss	3.5% × Mean o/s Loss Reserve
		Paid	o/s	Incurred (3) + (4)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
12-31-34	12	$ 520	$19,058	$19,578	..	..
12-31-35	24	1,560	18,797	20,357	$779	..
12-31-36	36	2,600	18,530	21,130	773	..
12-31-37	48	3,640	18,254	21,894	764	..
12-31-38	60	4,680	17,971	22,651	757	..
12-31-39	72	5,720	17,680	23,400	749	$624
12-31-40	84	6,760	17,383	24,143	743	614
12-31-41	96	7,800	17,077	24,877	734	603
12-31-42	108	8,840	16,764	25,604	727	592
12-31-43	120	9,880	16,443	26,323	719	581

It will be seen that the development of this claim is followed through 10 successive valuation dates, a period identical with that used by Mr. Greene. It can be further seen that the incurred loss on the first valuation date is $19,578 and on the tenth it is $26,323. Following Mr. Greene's line of reasoning, he would say that, since as of the tenth valuation date the incurred loss is $26,323 and on the first valuation date the incurred loss is $19,578, the reserve must be impaired $6,745 on this particular claim. Expressing it somewhat differently, Mr. Greene's argument amounts to this; since incurred losses include present values of unpaid claims, and since the sum of the actual payments when the claims are paid will exceed these present values, then these reserves must be deficient.

Applying Mr. Greene's argument to life insurance, we would arrive at the absurd conclusion that the single premium for $1,000 of whole life insurance is $1,000. As easy as all that!

The fallacy is of course obvious. As of any valuation date, the total incurred losses need not be those ultimately incurred,

and reserves need not be maintained so that the paid plus the unpaid should equal those ultimately incurred. It is sufficient to maintain *reserves* on a *present value basis.* Interest and mortality will take care of the rest. In order that an insurance institution may be solvent it must have at any particular moment only such a sum on hand as, with interest accumulations, will ultimately liquidate unpaid claims. It does not have to have on hand at that moment the interest that will be needed, as is implied by Mr. Greene's reasoning. I was satisfied that as of December 31, 1937 the surplus of the Fund over and above the required reserves, properly valued, was $4,340,435.

In a paper delivered in 1936 as a presidential address, Mr. Greene criticized the Ohio Fund and made certain comparisons to show that the compensation cost in Ohio was much higher than it should be. There was no discussion of that paper, since presidential addresses are not commented upon by members. At this time, however, I think it advisable to point out a few flaws in Mr. Greene's procedure which he again uses in the current paper.

To determine whether or not Ohio costs are excessive, Mr. Greene uses the following procedure which the reader can readily follow by reading the text and examining Table V and Table VIII of Mr. Greene's paper.

1. Ohio incurred losses and Ohio payrolls are used to obtain classification pure premiums and average overall pure premiums—Basis I.
2. The same procedure is repeated but Ohio incurred losses are increased 34.7% to adjust for "interest" and "reserve inadequacy." This increase of 34.7% is the one calculated by determining what the incurred losses on a tenth valuation basis should be—Basis II.
3. Payrolls and incurred losses for comparable classes are obtained for New York, New Jersey and Massachusetts. The incurred losses are placed on the level of the benefits in effect in Ohio by means of theoretical factors measuring the difference in benefit cost of the states.
4. Pure premiums on the basis of New York, New Jersey and Massachusetts payrolls and losses (adjusted to the Ohio level) are obtained and compared with the two sets of Ohio pure premiums.
5. Pure premiums on the basis of New York, New Jersey, and Massachusetts data are applied to Ohio payrolls to obtain "Projected Losses" to compare with Ohio losses.

Inasmuch as I have already disclosed the fallacy of Mr. Greene's reasoning with respect to inadequacy of reserves, I believe that it will be sufficient to disregard his Basis II wherein he loads Ohio incurred losses, putting them on a 10th valuation incurred cost basis. However, even if we take Mr. Greene's figure of 38% as the amount by which Ohio losses exceed those of the other states, the figure reduces to 2.5% if we exclude his error of using the factor of 1.347 to place losses on a 10th valuation basis $(1.38 \div 1.347) = 1.025$. But there are a few other points that should be discussed.

If we examine Table V of Mr. Greene's paper for the combined exposure for New York, Massachusetts and New Jersey, we see that "certain classes" with the lowest pure premiums have the greatest exposure, Textiles and Stores. It happens that both of these groups have almost the same pure premiums as those of Ohio. If we exclude these groups, we find that the average pure premium of the groups for which exposure is shown in Part A of Exhibit I changes from 79¢ to $1.61. Similarly, when these "certain classes" are excluded in Part B of Exhibit I, the pure premium changes from 60¢ to $1.51. The details are shown on Exhibit I herein. Obviously, the differences between Ohio and the other states must be due to the presence of a relatively greater proportion of low rated payrolls in New York, Massachusetts and New Jersey. Since the lowest rated groups have practically the same pure premiums, and since the remaining groups also have almost the same pure premium, and the average is materially different, it is evident that we are comparing exposures with quite different distributions of risk.

There is still another way of proving the point. Mr. Greene has taken the pure premiums for New York, New Jersey and Massachusetts and applied them to Ohio payrolls to obtain "projected losses." This indicates that if the New York, New Jersey and Massachusetts pure premiums were in effect in Ohio the equivalent incurred losses would be $28,926,748 (Column 10 of Table V) compared to Ohio incurred losses of $29,561,000 (Column 2 of Table V). The ratio of actual to projected on this basis is 1.022, a figure which corresponds roughly to the 2.5% previously quoted. But we can test this procedure. If we apply the Ohio pure premiums to the payrolls of New York, New Jersey

and Massachusetts, we obtain projected losses of $97,414,695 to compare with incurred of $97,428,087 (Column 7 of Table V) or a ratio of .999, indicating that Ohio pure premiums if applied in New York, New Jersey and Massachusetts would yield practically identical losses.

There is a third test we can apply to Mr. Greene's procedure. The incurred losses for each of the three states have been placed on a common benefit level, that of Ohio. Since the same insurance companies, to a greater or less extent, operate in all three states, and since incurred losses are probably set up on a uniform basis we should expect more or less similarity in pure premiums. But the pure premium indications are as follows:

New York	.86
New Jersey	.83
Massachusetts	.60
These three states combined	.80

Massachusetts appears to have a much lower pure premium than New York. Following Mr. Greene's line of reasoning, we would or could say that compared to Massachusetts, the losses in New York and in New Jersey are 30% higher than the level indicated by Massachusetts experience.

All of the above has been presented to illustrate the fact that comparisons such as Mr. Greene makes are meaningless, unless we examine and make certain that the exposures have *equal* weight.

We must remember that Mr. Greene has excluded all loadings from the losses. In addition to the expense loading which should be included both for Ohio and the other states, he has left out: (1) loadings for off-balance of rating plans, which run in the vicinity of 5% to 10%; (2) contingency factors which prior to this year amounted in New York to 9.2% and now to 4.3%; (3) loadings for special security funds which in New York also amount to 1.2%. These special loadings are required, presumably to make certain of the continued solvency of the insurance carriers. Whatever their need and whatever their uses, these special loadings add to the premium rate and are added charges which the employers must pay.

In concluding his paper, Mr. Greene makes reference to a report entitled "Progress of State Insurance Funds Under Workmen's

EXHIBIT I

PART A

From Table 18 of New Report, Woodward and Fondiller, Inc.
OHIO EXPERIENCE

Group No.	Description	Payroll (hundreds)	Incurred Losses	Pure Premium
14A* & 14B*	Textiles	$ 267,262,0	$ 1,177,000	$ .44
18A* & 18B*	Stores—including clerical classifications	2,087,907,0	6,328,000	.30
Other Classes in groups 1-18 except above groups		1,366,540,0	22,056,000	1.61
Sub-Total groups 1-18		$3,721,709,0	$29,561,000	$ .79

PART B

From Table V of Mr. Greene's Paper
NEW YORK, NEW JERSEY AND MASSACHUSETTS ON OHIO LEVEL

Sched. Nos.	Payroll	Incurred Losses	Pure Premium
06 Textile* & 07 Clothing	$ 2,379,779,7	$10,318,587	$ .43
34 Commercial* & 35 Clerical and Professional*	10,197,601,3	31,477,463	.31
Other schedules except above schedules	3,672,867,7	55,632,037	1.51
Sub-Total	$16,250,248,7	$97,428,087	$ .60

* These groups are designated as "certain classes" in the text.

Compensation—A Quarter Century of American Experience," by John B. Andrews and denounces that report as "the frankest sort of propaganda."

Mr. Greene's introduction of the "propaganda" motive cannot help but cause the reader to wonder whether, in his paper, he has not attempted to battle the propaganda he denounces with still more propaganda, under the guise of scientific demonstration.

I have only a scientific interest in the issues drawn between Mr. Greene and the proponents of monopolistic state funds and have prepared this discussion of his paper solely with a view to establishing that my analyses and valuations of the Ohio State Fund were actuarially sound.

MR. E. I. EVANS*:

Two papers have been presented before the Casualty Actuarial Society by Winfield W. Greene that have severely criticized the Ohio State Insurance Fund.

Mr. Greene in his presidential address before the Society in 1936 first made the record of the Ohio Fund an issue in the controversial subject of state funds *vs.* private companies in the field of workmen's compensation insurance, and at that time invited a discussion by stating that the Society was a strictly non-partisan body and would welcome a rebuttal.

Mr. Greene has found it necessary in his latest paper to attack the technical ability of Mr. Richard Fondiller and his staff, who made the latest actuarial audit of the Fund, in order to establish a color of doubt as to the Fund's financial status, as the record of the Ohio Fund as contained in its latest Actuarial Audit Report does not make it possible to make an unfavorable comparison of Ohio with private carriers. Mr. Fondiller will no doubt cover effectively the involved technical process that Mr. Greene follows in developing hypothetical items from which he endeavors to assume that the financial statement of the Ohio Fund understates its liabilities to the extent of $10,765,000.

As it is apparent that Mr. Greene's paper is for the prime purpose of propaganda against state funds and as Mr. Fondiller will

* EDITORIAL NOTE: Request to discuss Mr. Greene's Paper was made by Mr. Evans and granted by the Council.

not necessarily be concerned in such an issue, it is proper that the Ohio Fund reply to the outburst against it.

The attack is directed against the actuarial technique followed by the administrator of the Ohio Fund, in an endeavor to portray a condition of inadequate reserves, insolvency and abnormally high rates. Having been actuary of the Fund for the past nineteen years I feel it is incumbent upon me to reply and challenge the position taken by Mr. Greene and to point out the fallacy of his conclusions in order that erroneous impressions will not be obtained respecting the Ohio Fund.

I deeply appreciate the consideration of the officers and Council of the Society in granting me the privilege of discussing this paper.

It is only natural that opponents of state funds, particularly exclusive funds, will search enviously for vulnerable points of attack against the Ohio Fund. The accomplishments of the Fund over the twenty-eight years of its existence and its having long become the distributor of more workmen's compensation benefits than any other insurance carrier in the country, has well disproved the many predicted forebodings that would befall an exclusive state fund. While Ohio can easily be proud of its workmen's compensation exclusive state fund, it is not contended that there is no room for further improvement and it is even further recognized that private carriers do have many points of merit.

It has been the policy throughout the history of the Ohio Fund to periodically have comprehensive actuarial audits and administrative surveys by outstanding independent technical actuarial firms in order to obtain constructive advice and criticism on technical and administrative phases of the operation of an efficient workmen's compensation carrier. A substantial measure of credit for the success of the Ohio Fund can be attributed to thorough examinations by such prominent actuaries as E. H. Downey (deceased), Miles M. Dawson and Richard Fondiller. The Actuarial Audit Reports of these men made at various times have always been published and copies generously distributed to the interested public.

Mr. Greene first represents that various public committees and commissions have reported grave lack of efficiency in the operation of the Ohio Fund. The Ohio Fund has always been open to public scrutiny and it has never been admitted that the fund has received

adequate administrative appropriation to perform as efficiently as would be desired. However, it must be remembered in this regard that the administrative cost of the Ohio Fund has averaged less than 7 percent of the benefits distributed, while private carriers provide in their premium rates for an administrative cost of 67 percent of their benefits distributed.

The Ohio Fund has been credited with having furnished compensation insurance at a lower cost than any other plan, thereby benefiting not only employers but also the employees since the saving in the insurance cost becomes potentially available for more liberal benefits. This fact appears to have motivated Mr. Greene to endeavor to establish that the pure premium cost of the Ohio Fund was 38% higher than for a corresponding period, on a comparable law benefit level, for the private insurance company states of New York, New Jersey and Massachusetts.

As this is the second analysis that Mr. Greene has made of the operating record of the Ohio Fund he is confronted with the difficulty of being consistent in his method of comparison of Ohio with the three private company states in his two papers. He states that he is unable to understand why Ohio's pure premium dropped from $1.20 to 91¢ from the five years 1929-1933 to the five years 1933-1937, and immediately reasons that something is wrong with the data producing the 91¢ pure premium rate, and proceeds to endeavor to establish a basis for inflating the 1933-1937 incurred losses to a level equal to that of 1929-1933.

It is well recognized by those who have been in touch with workmen's compensation insurance cost that the effect of the down swing into the depression over the five year period 1929-1933 resulted in severely increasing incurred losses and that the up swing over the five year period 1933-1937 resulted in a decided improvement in loss ratios. Mr. Greene is surely mindful of the fact that several private insurance carriers in the workmen's compensation field met with financial difficulties during the dark days that fell within the five year span, 1929-1933, which resulted in their failure to meet their claim obligations. It is only proper to state at this point, that the Ohio Fund as well as all other state funds, met their claim obligations in full. The inability of injured workers and their families to receive benefits due to financial difficulties of private carriers was of such moment as to occasion the

establishment of special security funds against insolvency of private carriers to provide for unpaid claims of insolvent insurance companies. The necessity of security funds was to alleviate the demand for establishing exclusive state funds in private insurance company states.

The $1.20 Ohio pure premium for 1929-1933 used by Mr. Greene in his first analysis was based upon incurred losses before giving effect to interest earnings allocatable to such losses, while the 91¢ pure premium for 1933-1937 used in his second analysis was on incurred losses after giving effect to interest earnings. The effect of interest earnings reduces the $1.20 pure premium to $1.06. The remaining difference is largely due to lower incurred losses attributable to the improved economic condition of 1933-1937 over 1929-1933 as previously indicated. The high incentive for effective safety brought about by the broad merit rating plan of the Ohio Fund which is extended to apply to employers with premium exposure as low as $200 for a five year period is an important factor in tending to improve loss costs. Also, the Ohio Fund's very aggressive activity in general safety promotion among Ohio employers and workers through a department maintained specifically for the promotion of safety and hygiene in industry results in reducing losses.

Mr. Greene contends that there were five different values contained in Mr. Fondiller's Report for the item of claims incurred. However, four of the values, while appearing in Mr. Fondiller's Report, do not refer to the same particular items and are so designated. One of the values was nowhere to be found in the report of Mr. Fondiller, but was actually created by Mr. Greene through an inflation of $6,020,000 to one of the other four values.

Further on in his paper Mr. Greene indicates that he appreciates the difference in the various values but erroneously contends that there should be no substantial difference in the incurred claims on a calendar year basis than on an accident year basis. It is appreciated that if at all times correct claim reserves are set up at the close of an accident year that there will be no necessity of adjusting earlier claim reserves in subsequent years. However, there is of necessity a continual, from year to year, adjustment of claim reserves of earlier years to a more or less degree; therefore, what may be true in theory is not so in practice. We are all

familiar with the fact that in the workmen's compensation field, insurance institutions were required to rather drastically increase claim reserves for re-opened and abnormally continuing claims attributable to the abnormal depression years. Indeed, Mr. Greene is no doubt familiar with the workmen's compensation experience of his own company as published in Best's Insurance News of July 11, 1938, in which the loss ratio of the 1930 policy year was increased from 84.2% on the second valuation at the end of 1931 to 111.07% on the 8th valuation at the end of 1937. This increase is rather characteristic of the experience of workmen's compensation carriers for the policy years immediately following 1929. In such instance, was the incurred loss reserve for the policy year 1930 properly stated at the end of 1931 and over stated at the end of 1937, or, was it understated at the end of 1931 and adequately stated at the end of 1937? In the light of knowledge available at the respective periods of valuation it is probable that the reserves were conservatively established and it would have been unreasonable to foretell the conditions that were to become potent factors in increasing losses in subsequent years.

The Ohio Fund must use its investment income for the payment of claims, thus reducing the value of incurred claim cost. As there has been an extreme reduction in investment yields in recent years the effect of such yield decline has a greater influence on state fund incurred claim losses than would be the case where investment earnings are not fully credited towards the payment of incurred claim losses. The Ohio Fund has increased the claim reserves from time to time in recent years to properly reflect the declining interest rates on investments of claim reserves. As claim reserves of earlier accident years have been adjusted downward in recent years from 4% to 3½%, it is natural that such adjustment would influence the trend indicated in Mr. Greene's Table III and the effect of which he has failed to recognize, unless he is assuming that the interest yield will continue to decline in a similar ratio for years into the future. This becomes illogical in that we approach an irreducible minimum as a substantial portion of the reserves at the close of 1937 were on a 3% and all others were on a 3½% basis.

In Table III of Mr. Greene's paper he has ignored the underlying basis of the claim reserve valuation established by Mr.

Fondiller at the end of 1937 and has illogically reasoned that because reserves have been strengthened over past years that such a strengthening should be an indication for further augmenting the reserves. In other words, he would have us reason that the more conservative you become the greater is the need for further conservatism in the setting of reserves. If this reasoning is accepted and continued ad infinitum there would be no upper limit. Would it not be as logical to reason that the Fund has been ultra conservative and has over a succession of years unnecessarily inflated the reserves to provide for upper limits of possibilities rather than for reasonable probabilities of future claim cost?

By assuming that the incurred losses were understated by Mr. Fondiller, for the five calendar years of accident, 1933-1937, an inflation of $18,048,858 has been made, raising the incurred losses from $52,014,000 to $70,062,858, or an increase of 34.7% before comparing the Ohio Fund's incurred loss experience with the experience of the private insurance company states of New York, New Jersey and Massachusetts.

We find further that another adjustment has been made which results in reducing the actual incurred losses of the three private insurance company states to the extent of 10% before making the comparison. This reduction is based upon theoretical law differential factors which are generally recognized as not necessarily indicative of the ultimate difference in the benefit levels of different states.

Mr. Greene contends that it is necessary to reduce the actual incurred losses of New York 17% (1.—83%) and increase the actual incurred losses of New Jersey and Massachusetts 1% and 12% respectively to bring the three Eastern states to a level of Ohio. If such is the case it should cause the pure premium of the three states, New York, New Jersey and Massachusetts, to have common pure premium rates. We find, however, the following is the result:

	Experience Pure Premium	Adjustment Factors to Ohio Level	Pure Premium After Adjustment to Ohio Level
Ohio	.91	1.	.91
New York	.86	.83	.7138
New Jersey	.83	1.01	.838
Massachusetts	.60	1.12	.672
N. Y., N. J. and Mass.	.80	.90	.72

The comparison of the actual experience pure premium with the pure premium as adjusted by Mr. Greene to what he contends was the Ohio level discloses very vividly that the pure premiums of the three private insurance company states have not been adjusted to a common level. We find that New Jersey and Massachusetts, which have exclusively private insurance, have widely separated pure premiums, .838 and .672. Does this difference between New Jersey and Massachusetts indicate that New Jersey employers are paying a cost 24% higher than they should and since there is no state fund, to what is the difference attributed? Must we not in fairness conclude that the use of the law differential factors to adjust to Ohio level results only in giving a disadvantage to Ohio of 10% in the comparison of pure premiums.

After having increased the Ohio pure premium 34.7% and decreasing the other three states' pure premium 10%, Mr. Greene is able to develop the 38% higher level for Ohio which he would have us believe represents the handicap to Ohio employers of a state fund. However, the increase of 34.7% and the decrease of 10% should result in a difference of 50%, $(1. + 34.7\%) \div (1.-10.\%) = 1.50$, therefore, we must look for the remaining difference that causes an inserted adjustment advantage of 50% to result in only a net advantage of 38%. It must be that the pure premiums of the three private insurance company states were actually at a higher level than that of Ohio.

Mr. Greene has selected particular groups of industry classifications for making a comparison. This comparison in Table V is a play upon comparing two separate averages of similar items but of unequal weights. The comparative table reflects false ratios unfavorable to Ohio and strongly in favor of New York, New Jersey and Massachusetts, due to the unbalanced experience of low and high hazard industries. It will be observed that for coal mining and quarries, which are very high hazard industries, the Ohio data has twenty times the relative exposure of the other three states while in the textile and clothing industries, which carry very low hazards, Ohio has less than half the relative volume of the other states; also in the case of clerical, commercial and professional groups, with low hazards, Ohio's relative ratio is far below that of the other three states. The comparison of the averages of Ohio with the other three states as developed in

this table is meaningless due to the preponderance of high hazard industries in Ohio data and the preponderance of exposure of low hazard industries in the data of the other three states. It can readily be determined that this off balance of high hazard and low hazard industries gives a disadvantage of 23% to Ohio in the comparison in Mr. Greene's Table V.

We thus find that the 23% developed by Mr. Greene analyzes as follows:

Ohio pure premium	$ .91
Inflating Ohio incurred losses 34.7%	1.23
N. Y., N. J. and Mass. pure premium	.80
Increase for preponderance of light hazard industries in N. Y., N. J. and Mass. 23%	.98
Decrease by law differentials N. Y., N. J. and Mass. 10%	.89
Ohio pure premium above N. Y., N. J. and Mass.	38%

We, therefore, have a situation in which the Ohio pure premium of 91¢ has been compared with pure premium of New York, New Jersey and Massachusetts of 89¢ by inserting various adjustment factors that inflate Ohio and deflate the other states until there is an indicated excessive pure premium of 38% in Ohio.

A comparison of the experience for the classifications used by Mr. Greene after eliminating his inflation of incurred losses for Ohio and his deflation of the incurred losses of the private insurance states would be as follows:

Ohio	Amount	Rate per $100 Payroll
(1) Payroll Greene's Table V	$3,721,709,000	
(2) Incurred losses Greene's Table V	29,561,000	$ .79
(3) Incurred losses loaded for catastrophe and occupational diseases. 1./.97 × line (2)	30,475,258	.82
(4) Ultimate premium after including 1% for safety. 1./.99 × line (3)	30,783,089	.83
N. Y., N. J. and Mass.		
(5) Deflated pure premium rates applied to Ohio payroll Mr. Greene's Table V	28,926,748	.78
(6) Actual pure premium applied to Ohio payroll. 1./.90 × line (5)	32,140,831	.86
(7) Ultimate premium after including administrative expenses. 1./.60 × line (6)	53,568,052	1.44

We thus find that were private insurance stock company carriers operating in Ohio in lieu of the State Fund, the experience

of the three Eastern states indicates that Ohio Employers would pay under private stock company carriers 73.5% higher rates or premiums of $53,568,052 instead of $30,783,089 under the classifications used in his comparison. This is directly the opposite of what Mr. Greene would convey: that Ohio employers would pay 38% higher premium rates under an exclusive state fund plan than under private insurance carriers.

Were we to concede that the deflation of 10% should be made in the pure premium rates of the three private insurance company states it would then mean that Ohio employees and their families would receive 5% less benefits than under the state fund plan and employers would pay premium rates 56.6% higher than at present.

Table I gives a direct comparison of premium cost to employers in the states of Ohio and New York. New York has been used in that it represents over 60% of the total payroll exposure of the three private insurance states used in Mr. Greene's comparison. The published rates of Ohio and New York have been applied to the Ohio payroll of specific classifications to determine the relative premium cost to employers in each state.

Twelve classifications of industries that are generally common to all states and in which the classification descriptions are similar in Ohio and New York have been selected for comparative purposes. In order to eliminate any factor of error due to uneven distribution of payroll within the two states, the published rates of the two states have been applied to the Ohio payroll in developing the premium for each state.

The comparison discloses that the Ohio Fund rates develop premium amounting to $8,402,178, while the premium for the same classifications and payroll at New York rates is $17,511,577; thus, were Ohio employers being insured under the New York plan, their premium cost would be $9,109,399 more than under the Ohio plan. Consequently, the ratio of cost to the employer between the Ohio Fund plan and the New York Private Insurance Plan would be in the ratio of one to two.

Inasmuch as 99% of the premium income of the Ohio Fund is used for the purpose of paying benefits, while the rates of the private insurance companies in New York contemplate only 60% of the premium for losses, the amount of expected losses between the two states is readily determinable. The twelve classifications

under the Ohio Fund rates would provide for losses of $8,318,156, while the losses provided under the New York rates would amount to $10,506,946. This would indicate that the New York rates contemplate 26.31% higher losses than the Ohio rates; however, the 60% allowance in the New York rates for incurred claims includes loss expense of investigators, adjusters, rents, salaries and expense of office employees, home office expense and other expenses under or on account of claims, whether allocated or unallocated to specific claims, while the 99% in the Ohio rates is for benefits only. When allowance is taken for the loss expense that is included with benefits, the additional benefits that employees and their families receive under private insurance New York rates would be substantially below the 26.31% indicated in the table.

Ohio's responsible representatives of labor and employers are not blindly committed to state monopoly as Mr. Greene fears, for they have been kept fully acquainted with the facts as to the twenty-eight years record of the Ohio Fund.

In conclusion, I respectfully but emphatically disagree with the technical procedure and conclusions Mr. Greene presents in his paper. The accomplishments of the Ohio Fund are naturally distasteful to the proponents of private insurance and Mr. Greene in an endeavor to disprove these accomplishments has delved into the realm of conjecture in unnecessarily inflating the Ohio incurred losses, thus invalidating the comparison he presents.

Mr. Fondiller with a competent staff and with access to all records of the Ohio Fund, has made a comprehensive and emphatic statement as to the unquestionable solvency of the Fund.

The futility of scientifically demonstrating that a properly administered workmen's compensation exclusive state fund is not more economical from the standpoint of lower premium cost to employers and more liberal benefits to workers is apparent.

TABLE I

COMPARISON OF OHIO AND NEW YORK WORKMAN'S COMPENSATION
PREMIUM RATES AND PURE PREMIUM
12 Classifications

Classification	OHIO '33-'37 Payroll (000 Omitted)	OHIO Manual	OHIO Rate 7-1-39	OHIO Full Premium	NEW YORK Manual	NEW YORK Rate 7-1-39	NEW YORK Full Premium	New York Excess over Ohio
Bakeries	$ 84,436	2000	$1.20	$1,013,232	2003	$2.72	$ 2,296,659	$1,283,427
Laundries	32,879	2581	1.00	328,790	2581	1.96	644,428	315,638
Shoe Mfgrs.	59,909	2660	.40	239,636	2660	.91	545,172	305,536
Iron Foundries	52,628	3081	2.00	1,052,560	3081	3.13	1,647,256	594,696
Machine Shops	151,347	3632	1.00	1,513,470	3632	2.64	3,995,561	2,482,091
Brick Mfg.	32,004	4029	1.60	512,064	4021	5.40	1,728,216	1,216,152
Str. Steel Erection	2,947	5040	20.00	589,400	5040	48.28	1,422,812	833,412
Elec. Light & Power Co.	21,047	7531	1.80	378,846	7539	3.48	732,436	353,590
Traveling Salesmen	271,624	8747	.40	1,086,496	8742	.50	1,358,120	271,624
Clerical Office	943,063	8810	.05	471,532	8810	.10	943,063	471,531
Hotels	54,724	9050	.80	437,792	9052	1.65	902,946	465,154
Restaurants	70,760	9071	1.10	778,360	9079	1.83	1,294,908	516,548
TOTAL	$1,777,368		.47	$8,402,178		.99	$17,511,577	$9,109,399
% of Ohio				100%			208.42%	
Pure Premium Factor				99%			60%	
Pure Premium				$8,318,156			$10,506,946	
% of Ohio				100%			126.31%	

AUTHOR'S REVIEW OF DISCUSSIONS

MR. WINFIELD W. GREENE:

The subject under discussion is fraught with grave importance not merely to the insurance business but to employers, employees, legislators, and the public generally. Therefore, I think it both fitting and fortunate that Mr. Fondiller and Mr. Evans, both of whom are closely in touch with the operations of the Ohio State Fund, have commented upon my paper.

Just to clear the air, let me say that I am not "attacking" any individuals whatsoever. I am trying to present the facts and their significant implications as I see them and insofar as I can uncover them. There is no doubt that I am attacking the institution of state monopoly of compensation insurance. It may possibly have been "a noble experiment" but I do not believe its further continuance to be a sound thing socially or economically. (Nor do I think well of private monopoly, except it be a natural monopoly subject to effective governmental supervision.)

To the informed and discerning much of what my critics have said is, in my opinion, self-defeating, unsupported, or irrelevant. Therefore, in order to minimize confusion, and conserve the time of the reader, I shall concern myself mainly with a reappraisal of the situation as regards the two major points raised in my paper, confining my direct comments on the above discussion to matters of some real significance.

My first main point had to do with

Adequacy of Reserves

In order to get a proper perspective on this general subject, I would direct attention to Table "A"[1] which shows all the information contained in the new report as to what happened to the Fund's loss reserves during the five calendar years ended with 1937. From this table it appears that with full credit for all interest realized the reserves for accident years 1932 and prior developed

[1] In this table the figures as to the reserves for all accident years prior to 1928 are of necessity lumped together, as Table 8 of the new report begins with accident year 1928. Table "A" is analogous to Table I of my paper but presents, I believe, a clearer and more detailed picture. In Table "A" all figures as to the deficiency of reserves are shown net of interest, whereas in my previous table they were shown before deduction of interest.

a deficiency of $10,755,000 during the said five-year period, and that during the last four years of that period the reserves for accident years 1933 and prior turned out to be deficient to the extent of $11,270,000. Both the figures just stated reflect *only what had actually happened* by December 31, 1937, and include *no allowance whatever for developments expected after that date.* Now the surplus of the private fund at December 31, 1932 as stated in the published reports of the Industrial Commission of Ohio was $115,908. However, the reserve inadequacy on that date exceeded the published surplus by $10,639,092, so that at the end of 1932 there was actually a deficit in the fund of that amount. The surplus for the end of 1933 was $634,989 *according to the old report;* but once more the reserve inadequacy (*indicated by the figures in the new report*) exceeded the surplus, this time by $10,635,011, so that there was actually a deficit of $10,635,011 at December 31, 1933.

It is well to bear the figures just cited in mind in approaching the question as to the probable status of the Fund's reserves at December 31, 1937. If the reserves were inadequate to this extent at the end of 1932 and again at the end of 1933, there is a strong presumption that they were still inadequate at the end of 1937 unless a substantial improvement in the method of setting up reserves can be demonstrated. An inspection of calendar year results whether in total or by accident year (as shown in Table "A") does not encourage the view that such a reform has been effected and the conviction that there has been no such reform grows upon further analysis.

Mr. Evans points out that if all reserves at the end of 1937 were adequate the method which I employed would indicate inadequacy if such reserves had been insufficient in the past. This is correct. However, the only correction in reserve method mentioned by either Mr. Fondiller or Mr. Evans is a change in the rate of interest employed in determining such reserves as are subject to interest discount (which reserves, according to Mr. Fondiller, represent only half the total loss reserve). Now the greatest possibility of inadequacy in loss reserves lies elsewhere, in such matters as underestimation of the duration of disability, over-optimism as to the ultimate seriousness of claims, inadequate provision for the cost of re-opened cases, and underestimation of

ultimate medical cost. Unless the Fund corrected the errors which cropped up as time went on in its reserve system as respects these important matters, the story after December 31, 1937 is bound to read like the one prior to that date. Were such corrections made? Evidently not, as we shall soon see.

According to Table 8 of the new report (or Table 17 of the old report) the incurred cost for accident years 1928-32 as of December 31, 1932 was, after deduction of interest, $70,176,000. The amount of interest deducted according to Table 17 of the old report was $6,893,000. However, at the lower interest rates realized in the period 1933-37 (about 22% lower—see Table "C"), this deduction would have been about $5,377,000, or $1,516,000 less, and the incurred cost after deduction of interest would have been correspondingly *increased* to $71,692,000. The Industrial Commission of Ohio (Report of December 1, 1938) states that the compensable accidents in the period 1928-32 numbered 194,779, which indicates an incurred cost (less interest at 1933-37 realized rates) of $368 per compensable accident.

As per Table 8 of the new report, the incurred cost, less interest, of the accidents of 1933-37 was $52,124,000 as of December 31, 1937. Compensable accidents in 1933-37 (from the Industrial Commission report above cited) numbered 142,029, so the incurred cost (less interest at 1933-37 realized rates) per compensable accident was $367.

It is evident, therefore, that at the end of 1937 the accidents of the latest five years were, on the average, no more highly reserved than were the 1928-32 accidents at the end of 1932—and this in spite of the following:

1. The ratio of fatalities to total compensable cases is higher in the second five-year period (*2.50%* in 1933-37 as against *2.13%* in 1928-32).
2. According to Mr. Fondiller, claims subject to interest discount were reserved at 3½% and 3% at December 31, 1937, whereas such claims were, at the end of 1932, reserved at higher interest rates (mainly 4%, I believe).
3. The Ohio Fund rate manual (effective July 1, 1939), page 10, states "The cost of claims has shown an increase of 9% in the last ten years, the compensation cost having increased 10% while medical, hospital, funeral, and court cost increased 8%." This statement is consistent with a tendency to increasing cost observed in certain other states.

The reserves for the 1933-37 accidents at the end of 1937, were, therefore, no more adequate, possibly less so, than were those for the 1928-32 accidents at the corresponding date five years earlier! And in this connection it is significant that if Table III of my recent paper is amended to reflect only what happened to the accidents of 1928-32 in the five years ended with 1937 the indicated reserve deficiency at December 31, 1937 is reduced but slightly, i.e., from $10,765,000 to $10,405,000! (See Table "B").

As for the alleged disturbing effect on my calculations of the reduction in the interest rate employed in discounting long-term cases, this factor is more than offset by another, namely, that not merely long-term cases, but *all cases in reserve* were in the developments of 1933-37 as employed in my calculations credited with their proportion of *the entire investment income* of the Fund, which averaged per year 4.26% of the mean reserves. (See Table "C"). The Commission's recent action in valuing all long-term reserves at 3% implies that it does not expect a yield higher than 3% for some time to come. My calculations accordingly were unduly optimistic in not eliminating the interest credited to reserves in excess of 3% thereon. I haven't the Fund's reserve figures which would be requisite to an adjustment of my calculations to reflect both these "disturbances," but since the reserves as regards any given accident year must have been declining sharply throughout the period 1933-37 and the rate of interest realized was highest at the beginning of the period when the reserves were highest, I have no doubt whatever that the net effect of such an adjustment would be to *increase* the indicated reserve deficiency.

My conclusion is, therefore, that there is every reason to anticipate a deficiency in the 1937 loss reserves of the Fund of an amount approximating my previous estimate of $10,765,000.

Comparative Benefit Cost

My other main point was that making due allowance for differences in benefit scales and in distribution of payroll by industry, the benefit cost in Ohio is higher than it is in the three non-

monopolistic states of New York, New Jersey and Massachusetts. In this I am wrong according to both of my critics.

In my 1936 paper I presented calculations indicating that the Ohio loss cost for accident years 1929-33 was 38% higher than that indicated by the Eastern pure premiums for approximately the same period *converted to the Ohio benefit level and applied to the Ohio payrolls.* I notice that this particular comparison has not been directly attacked. I fail to see how it could be successfully attacked. According to the present state of the record, then, the Ohio cost in 1929-1933 was 38% higher than it should have been, taking the experience of the Eastern states as a standard.

I believe there are good reasons why my opponents did not lock horns with this 1929-33 comparison, to wit:

1. The experience as presented in the new report for the period 1933-1937 shows "claims incurred less interest," instead of "claims" as shown for 1929-33 in the old report. This makes the new Ohio experience look a lot better than it really is in comparison with the Eastern experience in which the interest is not so deducted. (Mr. Evans admits that deducting interest from claims incurred would reduce the pure premium for 1929-1933 from $1.20 to $1.06.)
2. The yearly record of compensable accidents published by the Ohio Industrial Commission indicates that the Ohio experience for the period 1933-1937 was more favorable than that for the period 1929-1933, and I admit the probability that the corresponding improvement in Ohio pure premium cost was greater than that occurring in the three Eastern states during the same interval.

In focusing attention upon the period 1933-1937, therefore, my opponents are picking their ground. But there is still no doubt that the Ohio pure premium cost even for the latter period is high compared with that of the three Eastern states.

In Table "D" appears a computation of the ultimate cost of the Ohio accidents of 1933-1937, based on the cost of the accidents of 1928-1932. The only assumptions involved in this computation are:

1. That occupational disease claims represent 1.1% of total cost. (This, as explained in Table II of my paper, is based on figures from the old report.)
2. That after December 31, 1937 the cost of the accidents of 1928 will "develop" to the extent of $3,080,000. (This figure is taken from Table III of my paper, which table, for the

reasons above stated, appears to be a reasonable estimate of reserve developments after 1937. Bear in mind also that in only five years' time accident years prior to 1928 revealed reserve inadequacies of $4,735,000. (See Column 5, Table "A").)

3. That the cost per compensable accident will be no less for 1933-1937 than it was for 1928-1932. (This is a most conservative assumption, in view of what the Fund's own rate manual has to say about increasing cost, and the fact that in the later period there occurred more deaths relative to the total number of compensable accidents.)

The conclusion reached in Table "D" is that the accidents of 1933-1937 will cost ultimately $63,458,000, which figure is 122% of total "Claims Less Interest" ($52,014,000) shown in the Ohio 1933-1937 table of experience by industry group (Table 18 new report).

If in Table V of my paper the Ohio losses from Table 18 are modified by the factor 1.22 (instead of by the factor 1.347) then, for the industry groups comparable with those in use in the Eastern States the modified Ohio losses become $36,064,000 (instead of $39,818,667) and the ratio of Ohio cost to cost indicated by the Eastern pure premiums (on Ohio benefit level, and applied to Ohio payrolls) becomes 1.25 (instead of my previous 1.38).[2]

Even if the situation as to comparative benefit cost is not as bad as I thought it was, still it is bad enough, for a benefit cost 25% higher than that indicated by the standard of the Eastern experience is a grave affair indeed from the standpoint of employer and employee alike, particularly the latter—because benefits are disbursed only in proportion to *death* and *disability!* There is no reason I am aware of to doubt that claimants get their just due in New York, New Jersey, and Massachusetts—therefore, there must still be relatively more *death* and *disability* in Ohio!

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[2] As stated in my opening remarks, I am merely trying to present the facts and their significant implications. Therefore, I freely admit that on basis of all the evidence now before me, my previous estimate of 138% for the period 1933-1937 is probably too high (this has nothing to do with my similar estimate for the period 1929-1933, which still stands at 138%—subject to the possibility that the Ohio payrolls for insured employers were for the period 1929-1933 understated owing to lack of adequate payroll auditing.) The revision which I have made in my estimate is due not to anything which Mr. Fondiller or Mr. Evans has brought out, but to certain figures as to com-

pensable accidents and the interest income of the Fund appearing in a report of the Industrial Commission of Ohio, which report, unfortunately, was not before me when my paper was written.

The reduction in the number of compensable accidents in proportion to payroll from the 1929-1933 accident-year period to the 1933-1937 period is amazing. According to the Industrial Commission report of December 1, 1938 there were in the period 1929-1933 174,037 compensable accidents for insured employers. The corresponding payroll from Table 13 of the old report was $5,770,090,000. From the same Industrial Commission report the number of compensable accidents for 1933-1937 was 142,029, which should be related to the payroll of $5,699,248,000 appearing in Table 18 of the new report. These figures indicate a drop in the number of compensable cases per $1,000,000 payroll from 30.2 to 24.9. I say "amazing" not only because the two periods overlap to the extent of a year but also because corresponding figures in other states reflect a much smaller reduction for periods representing the same mean point in time, as follows:

NUMBER OF COMPENSABLE ACCIDENTS PER $1,000,000 PAYROLL

State	Policy Years 1929-1932	Policy Years 1933-1936
New York	19.9	18.9
New Jersey	22.0	20.8
Pennsylvania ...	20.5	20.1

Some small portion of the greater reduction in Ohio may possibly be attributed to change in the distribution of payroll by industry but another possibility is suggested by a comparison of what Mr. Fondiller has to say in his new report (beginning on Page 65) regarding payroll audits and a reference which he made to the same subject on Page 65 of his previous report. Apparently when the old report was written, there was no separate division devoted to the task of payroll auditing for Mr. Fondiller says, "The sixth division of the State Fund is the field force, which at present consists of 86 employees, including office clerks and stenographers. There is no supervisor in charge of all functions of this division. The field man is expected to make payroll audits, collect delinquent accounts, make rating inspections and also make claim investigations. There are practically no men who are well qualified for all these duties, as has recently been recognized by the Commission." However, according to the new report, there was at the time of the report a "payroll audit division" numbering 68 persons, whose duties were "to make payroll audits, aid in the collection of delinquent accounts and make rating inspections." It is to be noted that no reference is made to "claim investigations" upon the part of the members of this payroll audit division. On Page 68 of the new report reference is made to a "claims investigation division" "numbered 85 (located in 18 cities), 60 of whom are directly engaged in claim investigation work." Furthermore, beginning on Page 65 of the new report, Mr. Fondiller says "In our 1934 report, we pointed out that in the *ten years* which had elapsed prior to the date of that report, an estimated additional premium of $558,299 had been developed by audits. During the *nine months* ended September 30, 1938, $642,527 was developed by audits. This startling difference in the amount of additional premium developed, would indicate that millions of dollars in additional premium may have been lost under the prior inadequate payroll auditing procedure."

I suggest the possibility that some part of the apparent improvement in the accident rate may be due to more complete reporting of payrolls.

Direct Comment Upon Discussion by Messrs. Fondiller and Evans

I.

Mr. Evans refers to "the fact that several private insurance carriers in the workmen's compensation field met with financial difficulties during the dark days that fell within the five-year span 1929-33 which resulted in their failure to meet their obligations," and goes on to say "It is only proper to state at this point, that the Ohio Fund as well as all other state funds, met their claim obligations in full." These failures were, I admit, unfortunate, but they do not, to my mind, furnish any ammunition for the proponents of state monopoly; for these private carriers would not have "failed" if they had been permitted to continue in business regardless of their financial condition, as has been true of the Ohio Fund! Incidentally these failures did not, I am reliably informed, occasion any substantial loss to compensation claimants in the State of New York, and such loss in any degree can hardly occur in that state in the future owing to the special security fund to which Mr. Evans refers.

II.

The fifteenth paragraph of Mr. Evans' discussion embodies an interesting philosophy as to loss reserves. If I "get" him, it is his thought that it is perfectly all right for reserves to turn out to be inadequate provided that "in the light of knowledge available at the respective periods of valuation, it is probable that the reserves were conservatively established, and it would have been unreasonable to foretell the conditions that were to become potent factors in increasing losses in subsequent years!" This is an arresting idea, but, for well or ill, it is not favorably considered by state insurance departments generally, nor, to my certain knowledge, by the Insurance Department of the State of New York. Mr. Evans refers to the fact that the compensation loss ratio for 1930 policy year of the company with which I am connected increased from 84.2% at the end of 1931 to 111.07% at the end of 1937. I admit that, taking the results of this one policy year, it looks as if we were following Mr. Evans' theory. I can assure him, however, that such is not the case. Incidentally, at the end of 1934 our loss reserves as shown in Schedule "P" for

policy years 1930-1934 reflected incurred losses of $963,962.61 against earned premiums of $1,338,679.13, or a loss ratio of 72.0%. Five years later, at the close of 1939, the same five policy years as shown in Schedule "P" reflected incurred losses of $994,791.93 and earned premiums of $1,487,039.00, or a loss ratio of 66.9%. Please note that after a development of five years the loss ratio based on the loss reserves carried in our statement went down a few points, not up a few points!

Of course, this reference to the figures of a reinsurance company is not really germane to our subject, but Mr. Evans asked for it!

III.

In an endeavor to prove that the Ohio benefit cost is really lower than that in New York, Mr. Evans submits a calculation based upon twelve classifications selected by him. There are several reasons why this comparison of his does not prove his point, namely:

1. Mr. Evans ignores the difference in benefits between Ohio and New York, a position which is of course entirely untenable. For example, compensation for death in Ohio (other than funeral expenses) cannot exceed the maximum of $6,500. In New York there is no stated limit, compensation being payable to children until age 18 and to the widow until death or re-marriage. The maximum yearly compensation is $1,200 in New York as against $975 in Ohio.

   For total disability, compensation may continue in both states until death, but the weekly maximum in Ohio is $18.75, whereas in New York it is $25.00.

   These and other substantial differences in benefits cannot be ignored, and to even consider ignoring them is astounding. The "law differentials" used in both my papers were obtained from the National Council on Compensation Insurance, where they keep them in stock, i.e., the differentials were not specially computed at my request.

2. Mr. Evans' assumption that for comparative purposes the Ohio pure premiums may be taken at 99% of the manual rate is unwarranted, as even if the Ohio rates effective July 1, 1939 are adequate (and this is not proven), the pure premiums obtained in this manner contemplate full credit

for all interest earned on all reserves for all time to come, whereas this is not the practice in determining pure premiums in other states.

3. The assumption that the New York pure premium is exactly 60% of the premium at manual rates is also unwarranted, since the pure premium derived from actual experience may be higher or lower than 60% of the manual rate.

Furthermore, it is not at all convincing to base a demonstration upon only twelve classifications not only because in each state some classifications show up relatively better than others but particularly because of the differences which exist between the Ohio system of classifications and the system prevailing elsewhere. However, when Mr. Evans' example is reconstructed upon a more nearly correct basis, it actually supports my contention of relatively higher cost in Ohio. (See Table "E").

In this table, perforce I have been obliged to adopt Mr. Evans' assumption as to the Ohio pure premiums (99% of the manual rates) because I have no Ohio experience by individual classification. However, I have applied the law differential of .83 as used in my paper (the ratio of Ohio benefit level to New York benefit level) to the actual New York losses for the latest policy year available (1937—first report) and have then applied the New York pure premiums on the Ohio benefit level to the Ohio payrolls by classification.[3] The result is as follows:

Cost on Ohio payrolls based on New York experience reduced to Ohio level	$7,254,507
Cost on Ohio payrolls based on Ohio pure premiums (99% of Ohio rates)	8,322,871

Even this hand-picked group of classifications therefore indicates an Ohio cost 15% higher than the New York standard!

In view of the disparity already mentioned between the Ohio classification system and that of the other states, a comparison by broad industry groups is much more significant than any study of a few classifications. Incidentally, I did not "select" (as Mr.

[3] I should point out that in Table "E", I have included in the New York experience all classifications which should be included in a comparison with the Ohio classifications selected by Mr. Evans; for example, for comparison with Ohio Code No. 5040, I have included not merely New York 5040 but also Code numbers 5041, 5057 and 5059, since these three additional New York classifications would evidently fall under 5040 in Ohio.

Evans implies) the particular groups of industry classifications which I used in my comparisons. Instead, I used all groups which could be identified with those of the other states. If Mr. Evans would be kind enough to furnish me with a breakdown of the other groups by classification, I will be glad to extend my comparison to include additional groups and, in fact, all groups if that turns out to be feasible.

IV.

Both Mr. Fondiller and Mr. Evans bring in the question of expense loading. Now, that is a subject beyond the scope of either of my papers, which dealt with benefit cost, a matter of more "social significance." Suffice it to point out that in New York, New Jersey and Massachusetts the employer does not pay the full 40% expense loading unless he wants to, since, if he prefers, he may insure his compensation risk with a mutual company or, if he is located in New York, with the competitive Fund of that state. At any rate, this matter of expense loadings is more involved than would appear from my critics' comments thereon. It makes a great deal of difference to the insurance carrier when figuring out its expense loading whether it *collects* 6% of its premiums from the state, as is done in Ohio, or *pays* the state about 5% of its premiums, as is done in New York.[4] It also makes a difference to the employer in figuring the cost of his compensation insurance whether he pays a "consulting actuary" a fee in addition to his premium, as many evidently do in Ohio,[5] or does not have to pay such a fee, as is true elsewhere.

V.

I would like to point out that when Mr. Evans objects, as he does, to my recognizing the difference in industry distribution between Ohio and the other states, he is actually arguing to his own disadvantage, since (as is indicated in Table V of my paper), the pure premium (Ohio benefit level) of the three Eastern States for the compared groups was only $0.60 based on the Eastern

[4] Premium Tax 2%, Industrial Commission assessment about 2%, Security Fund 1%.

[5] See Page 81 of the new report under the caption "Service Bureaus."

States' payroll distribution, whereas when I applied this experience to the Ohio payrolls I *raised* this pure premium to $0.78 ($28,926,748 ÷ $3,721,709,000)!

VI.

Mr. Fondiller devotes several pages to the alleged error of my ways in the matter of credit for interest on reserves. What he says is almost entirely incorrect or irrelevant, and therefore I shall not answer him in detail. However, that the reader may be in no doubt as to just what I have done in this connection, let me say again that in considering *solvency*, I have assumed that the Fund is entitled to full credit for all the interest it can earn on its reserves. However, the comparison of Ohio pure premiums with those of other states is an entirely different matter, and in such comparisons I have assumed that interest earned *up to the time of striking off the experience* (which in this case is 2½ years after the mean accident date) should, to conform to the practice in other states, *not* be deducted from incurred losses, as this is the *only* way Ohio experience can be made fairly comparable with that of other states.

Incidentally, the amount of interest deducted from incurred losses, according to Table 17 of the old report, is in some cases surprisingly great. For example, according to said table, at the "1st valuation" of the accidents of 1930 the incurred claims were $16,446,602, but "accumulated interest" of $536,343 had reduced the first figure to "net claims" of $15,910,259. Fast work, that! According to Table "C" the rate of interest realized by the Fund on its mean loss reserves was 5.64% in 1930, an attractive rate even in those days. The loss reserve at the end of 1930 would be in the neighborhood of 70% of the gross incurred claims or, say, $11,500,000 (according to figures appearing in the Ohio rate manual, about 30% of the cost of the new claims incurred in a given year are paid out in that year), so the mean loss reserve for the year would be about $5,750,000. *But* $536,343 is 9.33% (*not* 5.64%) of $5,750,000! The results up to the first valuation for accident year 1932, similarly analyzed, indicate an amount of interest equivalent to approximately 14.53% of the mean loss reserves for the year! In the hope that some member of this Society

may be able to arrive at the formula by which this "accumulated interest" is determined, I am attaching hereto (Table "F") an exact copy of Table 17 from the old report.

* * * * * * * *

Mr. Fondiller intimates that I am tilting at windmills. For this once, I am happy to agree with him, for windmills are quaint and ostensibly inexpensive contraptions which have become outmoded because they do not give as much or as quick service as is required in this streamlined age!

* * * * * * * *

The writer gratefully acknowledges the assistance of Mr. Howard G. Crane, Mr. James C. Barron and Mr. John J. Gately, without whose faithful and capable efforts this paper and the above answer to the discussion thereon could not have been completed. I am particularly indebted to Mr. Crane for his constructive criticism of the various technical methods employed.

TABLE A

CALENDAR YEAR CLAIMS INCURRED (LESS INTEREST) APPORTIONED TO YEAR OF ACCIDENT

Thousands Only (000 Omitted)

Calendar Year	(1) From Table 22, New Report) Claims Incurred	(2) Minus Investment Earnings	(3) Claims Less Interest	(4) All Years (3)×.96(a)	(5) All Prior to 1928 (b)	(6) 1928 (c)	(7) 1929 (c)	(8) 1930 (c)	(9) 1931 (c)	(10) 1932 (c)	(11) 1933 (c)	(12) 1934 (c)	(13) 1935 (c)	(14) 1936 (c)	(15) 1937 (c)
				Claims Incurred, Less Interest, O. D. Self-Insurers and Safety Violations — By Accident Year											
1933	$ 9,057	$1,884	$ 7,173	$ 6,886	*$1,752*	$ 443	$ 313	$ 422	$ 243	$ 235	$6,982				
1934	13,947	1,762	12,185	11,698	1,343	247	598	693	468	177	*62*	$8,234			
1935	12,589	1,714	10,875	10,440	3,968	*61*	*262*	*630*	*503*	*200*	*90*	*319*	$8,537		
1936	16,874	1,622	15,252	14,642	*722*	421	416	388	197	368	372	638	424	$12,140	
1937	21,351	1,337	20,014	19,213	1,898	264	756	592	382	53	199	357	555	*542*	$14,699
1933-37	$73,818	$8,319	$65,499	$62,879	$4,735	$1,314	$1,821	$1,465	$ 787	$ 633	$7,401	$8,910	$9,516	$11,598	$14,699

(a) Deduction to exclude self-insurers' claims, safety violations and occupational disease claims. Probably 2% would have been enough to deduct for these items; therefore, column (5) is certainly understated.

(b) Column (4) minus sum of columns (6) to (15), inclusive.

(c) From Table 8, new report (figures after "1st report" are differences between successive reports as to any given accident year).

RESERVE DEFICIENCY INDICATED BY DEVELOPMENT OF INCURRED LOSSES DURING FIVE YEARS ENDED DECEMBER 31, 1937 (BASED ON TABLE 8, P. 23, NEW REPORT)
ACCIDENT YEARS 1928-1932 ONLY

Year of Accident Occurrence	Incurred Losses (in Thousands) for Each Accident Year as of Successive Valuation Dates (a)									
	1st Val.	2nd Val.	3rd Val.	4th Val.	5th Val.	6th Val.	7th Val.	8th Val.	9th Val.	10th Val.
1928					$14,603	$15,046	$15,293	$15,232	$15,653	$15,917
									Total $15,653	$15,917
									Ratio—1.017	
1929				$17,769	18,082	18,680	18,418	18,834	19,590	
								Total $34,066	$35,243	
								Ratio—1.035		
1930			$15,874	16,296	16,989	16,359	16,747	17,339		
							Total $50,458	$51,405		
							Ratio—1.019			
1931		$13,045	13,288	13,756	13,253	13,450	13,832			
						Total $63,535	$64,290			
						Ratio—1.012				
1932	$ 8,884	9,119	9,296	9,096	9,464	9,517				
					Total $72,391	$73,052				
					Ratio—1.009					
				Total $56,917	57,788					
				Ratio—1.015						
			Total $38,458	39,148						
			Ratio—1.018							
		Total $22,164	22,584							
		Ratio—1.019								
	Total $ 8,884	9,119								
	Ratio—1.026									

Year of Accident Occurrence	(1) Incurred Loss (In Light of Valuation to 12/31/37)	(2) Deficiency Factor	(3) Deficiency as of Dec. 31, 1937 (1) × (2)
1928	$ 15,917,000	.000	$ —o—
1929	19,590,000	1.017 — 1.000 = .017	333,000
1930	17,339,000	(1.017 × 1.035) — 1.000 = .053	919,000
1931	13,832,000	(1.053 × 1.019) — 1.000 = .073	1,010,000
1932	9,517,000	(1.073 × 1.012) — 1.000 = .086	818,000
1933	7,401,000	(1.086 × 1.009) — 1.000 = .094	696,000
1934	8,910,000	(1.094 × 1.015) — 1.000 = .110	980,000
1935	9,516,000	(1.110 × 1.018) — 1.000 = .130	1,237,000
1936	11,598,000	(1.130 × 1.019) — 1.000 = .151	1,751,000
1937	14,699,000	(1.151 × 1.026) — 1.000 = .181	2,661,000
Total Latest 5 Yrs.	$ 52,124,000		7,325,000
Total 10 Yrs.....	$128,319,000		$10,405,000

Note: (a) "First Valuation" is at end of Calendar Year in which accident occurred; successive valuations annually thereafter.

TABLE C

INTEREST EARNED ON RESERVES

Year	(1) Reserve on Unpaid Claims (000 omitted) (a)	(2) Mean Reserve (000 omitted)	(3) Interest ("Investment Earnings on Claim Reserves") (000 omitted)	(4) Yield on Mean Reserve (3)/(2)
1928	$46,853	$46,816 (c)	$2,730 (c)	5.83 (c)
1929	46,779	46,816 (b)	2,730 (d)	5.83
1930	45,471	46,125 (b)	2,602 (d)	5.64
1931	41,962	43,716 (b)	2,382 (d)	5.45
1932	38,807	40,384 (b)	2,008 (d)	4.97
1933	35,409	37,108 (b)	1,884 (e)	5.08
1934	37,369	36,389 (b)	1,763 (e)	4.84
1935	37,643	37,506 (b)	1,714 (e)	4.57
1936	41,362	39,503 (b)	1,622 (e)	4.11
1937	47,893	44,629 (b)	1,337 (e)	3.00

Average (arithmetic) yield 1928-32 = 5.54%
Average (arithmetic) yield 1933-37 = 4.32%
Ratio yield 2nd period to that of 1st period = $4.32/_{554} = .78$
Average (weighted) yield 1933-37 = 4.26

(a) From Table II, Report of Industrial Commission of Ohio, December 1, 1938.
(b) (Column (1) + same column previous year) ÷ 2.
(c) Assumed to be the same as for 1929.
(d) From Table 16, Old Report.
(e) From Table 22, New Report.

TABLE D

ESTIMATE OF ULTIMATE COST OF THE ACCIDENTS OF 1933-1937

Claims incurred as of December 31, 1932, accident years 1928-32 (before interest deduction*). (From Table 17, old report)	$77,069,000
Divide by .989 to cover Occupational Disease	77,926,000
Add actual developments from December 31, 1932 to December 31, 1937. (From Table 8, new report)	6,020,000
Expected developments after December 31, 1937. (From Table III of my paper)	3,080,000
Ultimate cost of 1928-32 accidents	$87,026,000

From Report of Industrial Commission of Ohio
(Dated December 1, 1938):

	1928-32	1933-37	Ratio of 2nd to 1st Period
Number of compensable accidents	194,779	142,029	.72918

Ultimate cost of 1933-37 accidents therefore = $87,026,000
× .72918 = $63,458,000

Factor to raise "claims less interest" and Ohio pure premiums from Table 18, new report, to ultimate cost level is therefore

$$\frac{63458}{52014} = 1.220$$

* See discussion of the treatment of interest under Caption VI.

TABLE E

Comparison of Ohio and New York Pure Premiums For 12 Classifications Selected by E. I. Evans

Ohio Data						New York Data						
								POLICY YEAR 1937—LAST REPORT				
Code No.	Classification Wording	7/1/39 Rate	Pure Premium (.99×(1))	33–37 Payroll in Thousands (000 Omitted)	Expected Losses (2)×(3)	Code No.	Classification Wording	Payroll in Thousands (000 Omitted)	Losses	Pure Premium (6)÷(5)	Pure Premium on Ohio Level (.83)×(7)	Expected Losses on Ohio Payroll (8)×(3)
		(1)	(2)	(3)	(4)			(5)	(6)	(7)	(8)	(9)
2000	Bakeries	$ 1.20	$ 1.188	$ 84,436,	$1,003,100	2001	Cracker Mfg.	$ 3,176,	$ 25,852	$	$	$
						2003	Bakeries, incl. S.; D. C. & H.	42,205,	595,074			
						2016	Breakfast Food Mfg.	206,	5,585			
							Total	45,587,	626,511	1.374	1.140	962,570
2581	Laundries	1.00	.990	32,879,	325,502	2580	Laundries, Wet Wash	288,	2,723			
						2581	Laundries, N.O.C., including handwork	34,327,	348,347			
							Total	34,615,	351,070	1.014	.842	276,841
2660	Shoe Manufacturers	.40	.396	59,909,	237,240	2660	Shoe or Boot Mfg. or Repairing	23,485,	104,145	.443	.368	220,465
3081(a)	Iron Foundries	2.00	1.980	52,628,	1,042,034	3081	Iron Foundries, N. O. C., including Malleable Iron Works	7,243,	144,499	1.995	1.656	871,520
3632	Machine Shops	1.00	.990	151,347,	1,498,335	3515	Textile Machinery Mfg.	2,529,	30,621			
						3516	Loom, Harness or Reed Mfg.	3,	666			
						3548	Printing and Bookbinding Mach'y Mfg.	4,317,	34,825			
						3559	Confectioners Machinery Mfg.	3,641,	27,998			
						3632	Machine Shops, N. O. C.	16,943,	268,181			
						3805	Engine Mfg.—Aircraft or Auto	499,	1,434			
						3900	Typesetting Machinery Mfg.	4,863,	26,673			
							Total	32,795,	390,398	1.190	.988	1,495,308
4029	Brick Mfg.	1.60	1.584	32,004,	506,943	4021	Brick, Clay, Earthenware or Tile Mfg. N. O. C., including D. C. & H.	1,902,	44,599			
						4024	Brick Mfg., Fire or Enameled, incl. D. C. & H.	130,	193			
							Total	2,032,	44,792	2.204	1.829	585,353

TABLE E—*Continued*

COMPARISON OF OHIO AND NEW YORK PURE PREMIUMS FOR 12 CLASSIFICTAIONS SELECTED BY E. I. EVANS

OHIO DATA						NEW YORK DATA						
								POLICY YEAR 1937—LAST REPORT				
Code No.	Classification Wording	7/1/39 Rate	Pure Premium (.99×(1))	33-37 Payroll in Thousands (000 Omitted	Expected Losses (2)×(3)	Code No.	Classification Wording	Payroll in Thousands (000 Omitted)	Losses	Pure Premium (6)÷(5)	Pure Premium on Ohio Level (.83)×(7)	Expected Losses on Ohio Payroll (8)×(3)
		(1)	(2)	(3)	(4)			(5)	(6)	(7)	(8)	(9)
5040	Structural Steel Erection	$20.00	$19.800	$2,947,	$583,506	5040	Iron and Steel Erection	$881,	$170,717			
						5041	Painting, Bridge and Steel Structures	67,	38,637			
						5057	Iron and Steel Erection, N. O. C.	999,	163,291			
						5059	Iron and Steel Erection, not riveted	99,	2,620			
							Total	2,046,	375,265	$18.341	$15.223	$448,622
7531(b)	Electric Light & Power Cos.	1.80	1.782	21,047,	375,058	7539(c)	Electric Light & Power Cos., N. O. C. including S.; D. C. & H.	21,251,	395,444	1.861	1.545	325,176
							Total	21,251,	395,444	1.861	1.545	325,176
8747(d)	Traveling Salesmen	.40	.396	271,624,	1,075,631	8742	Salesmen, Collectors and Messengers—outside	379,128,	1,043,211	.275	.228	619,303
8810(e)	Clerical Office	.05	.050	943,063,	471,532	8810	Draughtsmen and Clerical Office Employees, N. O. C.	948,211.	497,297			
						8813	Airplane Clerical Employees	2,882,	10,937			
							Total	951,093,	508,234	.053	.044	414,948
9050	Hotels	.80	.792	54,724,	433,414	9052	Hotels	65,629,	586,603	.894	.742	406,052
9071	Restaurants	1.10	1.089	70,760,	770,576	9079	Restaurants	116,594,	1,243,704			
						9091	Catering	615,	10,918			
							Total	117,209,	1,254,622	1.070	.888	628,349
GRAND TOTALS		$	$ .468	$1,777,368,	$8,322,871			$1,682,113,	$5,824,794	$ .346	$ .287	$7,254,507

(a) Does not include Malleable Iron Works, Code No. 3086, which takes a lower rate.
(b) Does not include Construction, Code No. 7534, which takes a higher rate. New York Code No. 7539 includes Construction Work done by assured.
(c) Includes Construction.
(d) Does not include Collectors, Adjusters, Appraisers, etc., Code No. 8741, which takes a higher rate.
(e) Does not include Electric Light and Power Cos.' Office Employees not exposed to operating hazard, Code No. 7538, which takes a higher rate.
NOTE: Ex-medical payroll was included in New York experience. However, such payroll represented approximately 1.6% of total payroll.

TABLE F

(Exact Copy of Table 17 of Old Report)

DEVELOPMENT OF CLAIM RESERVES

Incurred Claims Minus Accumulated Interest

Year		1st Valuation	2nd Valuation	3rd Valuation	4th Valuation	5th Valuation	6th Valuation
1928	Incurred Claims	$20,075,013	$17,880,809	$17,850,274	$17,444,356	$16,641,486	$17,182,265
	Accumulated Interest	741,416	1,172,726	1,525,935	1,757,691	2,038,244	2,135,668
	Net Claims	19,333,596	16,708,083	16,324,339	15,686,665	14,603,242	$15,046,597
1929	Incurred Claims	20,126,188	20,853,572	21,481,978	19,793,296	20,252,180	
	Accumulated Interest	659,354	1,180,075	1,570,615	2,024,241	2,169,653	
	Net Claims	19,466,824	19,673,497	19,911,363	17,769,055	$18,082,527	
1930	Incurred Claims	16,446,602	18,147,568	17,348,183	17,943,107		
	Accumulated Interest	536,343	939,315	1,473,554	1,646,556		
	Net Claims	15,910,259	17,208,253	15,874,629	$16,296,551		
1931	Incurred Claims	13,005,734	13,927,917	14,339,677			
	Accumulated Interest	347,511	882,777	1,051,442			
	Net Claims	12,658,223	13,045,140	$13,288,235			
1932	Incurred Claims	9,360,485	9,737,752				
	Accumulated Interest	476,011	617,997				
	Net Claims	8,884,474	$ 9,119,755				
1933	Incurred Claims	7,120,556					
	Accumulated Interest	137,683					
	Net Claims	$ 6,982,873					

INFORMAL DISCUSSION

The Probable Aspects of the Present War on the Casualty Business

MR. JOHN A. MILLS:

When we start discussing "The Probable Effects of the Present War on the Casualty Business" we are immediately confronted with the problem of deciding the probable pattern that the war will take, also its probable length and its probable severity. It would take a prophet to predict the course of the war whereas we are mere actuaries.

In discussing the problem we probably should proceed on the assumption that the war will reach considerable magnitude, because obviously if it is short-lived or unimportant in its intensity it cannot have much effect on the casualty insurance companies.

As my part in this morning's discussion, I would like to say a few words about what the last World War can tell us and also what it cannot tell us about the probable effects of another war of about the same magnitude.

First of all, there is ample evidence to sustain the belief that the pattern of the present war will be decidedly different. At the time of the outbreak, in 1914, business had been suffering from a minor depression for a period of about a year and a half, and immediately following the outbreak the depression continued and, if anything, was accentuated. At the time of the current outbreak, business was definitely on the upgrade, and the purely forward buying of domestic commodities well in advance of actual war orders promised to carry business to new high levels during the months immediately ahead.

The difference in the effect on our security markets well illustrates the difference in the circumstances surrounding the opening of the war and the difference in the attitude of the public towards it. In 1914, the outbreak was followed by a severe crash in security prices which necessitated closing the exchanges for several months. At the time of the present outbreak, it was taken with comparative calm, and after a few hours of indecision there followed a wave of buying, particularly in those industries which appeared to be most favored by the export market.

The belligerents in the present war had been preparing for it a

long time and they had accumulated a tremendous volume of war supplies. The feeble fighting that has taken place so far has not made a dent in the accumulated supplies, and it appears entirely possible that the extent of our future exports has been grossly overestimated except, perhaps, in the case of airplane manufacturing. If this feeble fighting continues it is entirely possible that we will have to look toward tremendous rearmament purchases on the part of our own government, or other forms of deficit financing, to sustain the embryo "war boom," after the first of the year.

The action of the security markets and the hoarding of certain commodities such as sugar suggests that most people remember the last year or two of the last war a great deal more clearly than they do its beginning. It also suggests that there are many who have the feeling that the war may last a long time and that it may reach unprecedented severity. Now if it does, such a war can be expected to have considerable effect on the casualty insurance business.

In judging the probable effects of a serious war we are concerned with what it will do to production, to underwriting results, to the asset side of the statement and to the liability side of the statement.

Looking back at the record of the last World War, we find that production increased tremendously between 1913 and 1919; in fact, the increase was about 170%. But, on analyzing it more closely, we find there were other influences at work which were at least as important as the war itself. First we had the passage of workmen's compensation laws and second, we had the tremendous expansion in the automobile industry.

We, as actuaries, are more concerned with the effects of the war on underwriting results than with its effects on production. When we glance at the available records, we find that underwriting results were apparently satisfactory in spite of the fact that tremendous equities were being accumulated in the unearned premium reserves of the companies during the war period. In analyzing the underwriting results we should, of course, consider the various casualty lines individually because the war cannot be expected to influence them all in the same way.

Looking at workmen's compensation we find that the ten largest

stock companies and the three largest mutuals had a combined loss ratio that ranged between 60% and 70% during the war period. This was quite satisfactory, but we should look at some of the underlying causes for this, because these causes may not be at work to the same extent in the event of another world war.

First of all, the passage of workmen's compensation laws forced many employers to the realization that accidents represented an economic waste and it encouraged them to do something about it. The insurance companies also encouraged them to do something about it by granting rate credits for the effective safeguarding of mechanical equipment.

We should also recall to mind that at the time of the last war the majority of accidents were occurring by reason of mechanical equipment, and it was the effective safeguarding of that equipment that, in an important way, brought about a sharp decline in accident frequency per man hour of exposure. Machine accidents no longer make up the bulk of all industrial accidents, and consequently we cannot expect to have as substantial a cushion against the increase in accident frequency that ordinarily accompanies a war boom.

The increase in accidents that accompanies a war boom arises for a number of reasons, including, first of all, the fact that the re-employed man, even if he comes back to the same kind of work that he was doing before, faces changed conditions in the plant. Second, the employer has retained the best help, and those who are re-employed include many who are below average in intelligence and efficiency. Third, as production increases, less modern and less safe equipment is brought into use. And fourth, under the pressure for increased output, it is entirely possible that insufficient time may be taken to show the new man how to do the job safely.

If I were asked to guess how the rate level compared in 1914 with that in 1939, I would say that it was probably higher in 1914 in comparison with actual loss costs than at the present time. Although the companies have been having a very satisfactory experience on workmen's compensation for a number of years, there is good reason to believe that loss ratios are swinging toward higher levels. First of all, rate decreases—real rate decreases—after removing the effects of increase due to law amendments,

have been rather sharp over the past three years, and secondly there is some reason to suspect that other decreases may be in the offing. When and if the need for higher rates arises, there will be a delay due to the waiting period between the experience period on which the rates are calculated and the period to which they are applied and also because of the very sizable profit balances that have been accumulated under the calendar year method of determining contingency loadings.

Fortunately there are a number of important favorable factors. First of all, a war boom usually brings with it wage increases. National figures on wages are not available for the period of the last war, but looking at the record for the State of New York we find that wages virtually doubled during the war period. In judging what will probably happen this time, we can't afford to lose sight of the fact that wages have probably been held at an artificially high level by reason of New Deal activities, and that as a result we may not realize a proportionate increase in the event the present war boom reaches the magnitude of the last one. Also, increased wages, increased living costs, and plenty of work, practically eliminate malingering. We usually find that the indemnity provisions of workmen's compensation laws are not kept in step with increased wages and that there is such a wide margin between the two that the man who is able to work can't pass up the difference.

Now let us glance at the automobile record. Motor vehicle fatalities in 1914 numbered 273 per 100,000 registered cars. In 1919 this had fallen to 175 per 100,000 cars—a decrease of more than one-third. In 1938, motor vehicle fatalities numbered 108 per 100,000 cars, and it is unlikely that the next four or five years will produce a comparable decrease.

A war boom means more jobs, more cars, greater congestion. It means higher wages, more money for drink, more money for gas, more mileage, and that in turn warns us there may be more accidents per car. Later on, however, we may have a situation similar to the one that obtained during the last war, where the government demanded that there be conservation of gasoline supplies, and we may get "gasless Sundays," and in that event of course there will be a sharp decrease in the accident frequency particularly in the case of vehicles that are not used for business purposes.

A war boom usually brings a rise in the price level not only of the things we eat but of the things we use, and this means higher average costs for both property damage and personal injury cases.

I am not in a position to say whether the rate level in 1914 was higher or lower than at the present time, but here again we know that there have been very sizable rate decreases during the past two years, and that there is little margin remaining to absorb any increase in costs that may arise by reason of a war boom.

Looking at the asset side of the statement and going back again to the last great World War, we find that the thirteen companies to which I previously referred realized an average investment gain equivalent to 4% of their earned premiums during the six years 1914 through 1919. The gains ranged between 2% and 6% per annum.

It would appear, offhand, that the most serious effect of a severe war would be felt on the liability side of the statement, because it will cost more money to liquidate outstanding claims. Fortunately, the companies have improved their reserve position tremendously during the past five years, and the vast majority of them are in a position to face a higher cost on outstanding losses without a serious result on their surplus.

On the whole I would say that the company that has a well diversified business and which has taken full advantage of the past five years to put its house in order, has little to fear from a war that does not exceed the magnitude of the last World War. One of the dangers on which others here are better qualified to speak is that another war may bring further infringement of the government into private business, and particularly into the casualty insurance business.

MR. A. H. REEDE:

I'd like to make a few observations with regard to some of Mr. Mills' remarks on the compensation insurance business.

It appeared to me that in the course of his excellent discussion of this matter, Mr. Mills missed one or two points that are extremely important to this group. With regard to the question of trade, for example, it seems important to divide our trade with the European nations into at least two parts before we draw any con-

clusions as to its effect on employment in American industry. In the first place, we should take from the European trade that trade which goes to Central Europe and more especially Germany.

As he sagely observed there is a very great difference between the situation to-day and the situation in 1914 and 1918. At that time our trade with Germany alone, for example, represented nearly 10% of our foreign trade. At the present time—that is, as of September 1st (directly before the war started), rather—it represents less than 3% of our total foreign trade. Therefore, the loss of this trade with Central Europe, or more especially with Germany, is much less severe than that loss was in the opening months of the first World War. And during that period, from August, 1914, to May, 1915, the effects of the loss of the trade with Germany aggravated, I believe, that period of depression in which we found ourselves in 1914.

The question of the trade with Western Europe, particularly with England and France, involves the further question whether Germany can interrupt that trade sufficiently to cause it to be much less a factor in our employment situation. Thus far apparently the interruption of American trade with Europe, chiefly in European vessels, has not been sufficient to indicate that we need have any fear on that score.

Now on the question of the effects on our employment, we already see a very considerable increase in American employment, and presumably a considerable portion of that is due to the operation of the war. We find, for example, that the most spectacular increase in employment has taken place in the steel industry, and if we examine it more closely we find that has affected certain types of steel goods which are used for war purposes. We find that the most spectacular increases in the production of food articles have affected certain articles of food such as canned meat and canned fish, both of which are important items in the diet of soldiers. Whether these developments will continue or not, depends on the extent of interruption of American trade with Europe. If the present trend continues, what will the effect be on our industrial accident experience?

It seems to me that we have rather good evidence on that point. In the October number of the Monthly Labor Review, the United

States Department of Labor has released material with regard to industrial injuries in the United States in 1938. Their sample includes about 4,500,000 workers—that is, if normal employment conditions exist—and about 4,000,000 of them are in manufacturing industries. It would be better for our purpose if the sample were more representative, but with regard to manufacturing industries we find that from 1937, a year of very considerable employment, to 1938, employment declined 15%, and man hours about 22%. Yet, on the other hand, accidents declined much more—fatalities and temporary injuries, about one-third, and permanent injuries nearly one-half. The time lost on account of these injuries dropped 40%; the frequency rate dropped 17%; the severity rate, 25%. In other words, both frequency and severity fell off during a period of decline in unemployment.

If you compare the years 1935 and 1936, you will see the situation in reverse. In other words, industrial accidents increasing more than employment.

Now it is true these are accident rates, and of course underwriters are interested more in loss costs. As Mr. Mills has shrewdly observed, it is a question there of deciding whether the possibility that a greater number of these workers may fall within the limits set by the maximum weekly compensation, etc.—will offset the tendency to greater accident frequency.

He pointed out that at the present time our wage rates were at artificially high levels, and thought that perhaps we might not see as great an increase in wage rates during this war as we saw during the period 1914 to 1918, for that reason. This is one point where it seems to me wise to draw a distinction between wage rates and earnings. It is very true that wage rates are, at the present time, at an artificially high level, but it is also true that the people who are earning these wage rates are, to a very considerable extent, not working full time. So far as the maximum rate provisions of our workmen's compensation laws are concerned the question of earnings is much more important than the question of rates, because they refer to past weekly earnings and not to hourly wage rates. We may see, therefore, a very considerable increase in weekly earnings with little or no change in wage rates. Indeed, the developments of the last two months already indicate some increase in weekly earnings. If that continues, it undoubt-

edly will tend to offset any increases in industrial accident frequency and severity.

With regard to the production of war materials, whether or not we are able to ship them to England, there is no question that we shall produce a very considerably larger volume simply because of our attitude toward our own defensive needs. Our attitude is not nearly as passive as it was in 1915 and 1916.

MR. GREGORY C. KELLY:

I could not be expected to speak on compensation premiums and premium rates in approaching the effect of war on casualty insurance. I think the war will have little to do with them.

In Pennsylvania we have a loss ratio of 57% for the 22 years of compensation history to 1937, the last year now reported. These loss ratios have ranged from 32% in 1918 through 73% in 1930. There are loss ratios of 62%, 66%, 71% and 50% in the several years, but it totals up to 57. Rates have run from 61¢, 58¢, 57¢, 85¢, $1 and $1.15 per hundred of payroll, but over the 22 years they average 77¢. A number of changes of benefits have occurred. Average wages have gone from $15.50 per week in 1916 to $27 in 1930, $19.45 in '33, $24.87 in '37, and compensation of course has changed in proportion. But over the 22 years, we still have 57% as the loss ratio.

The lag of premium rates is not very long after any circumstance affecting the rates and the premiums. Suppose the interval is a matter of two years or three years; that is a relatively short period. If losses increase in proportion to premiums we can make up the deficiency readily. If the trend is the other way, we can make the appropriate rate adjustments. It seems to me, therefore, that the discussion should center on what the war will do to the investments of the companies, rather than on losses or accident rates.

It has been said by some financial advisers that the war will cease in the summer through the collapse of Germany, and they have given rather good reasons for it, but it seems to me that the circumstances are viewed in accordance with American psychology rather than with German psychology, and that we are no closer to a knowledge of the length of the war than we were before it

started. Of course it is the length of the war that will determine its effect. We are in a better position in casualty insurance than we were in the last war. There have been several years of high rates. Unfortunately, such a period is followed by underwriting carelessness and we can lose this advantage if we don't watch our step.

Dr. Huebner, in the General Alumni Magazine of the University of Pennsylvania, has referred to the increase of public debt, which has gone from 16,000,000,000 in 1933 at the beginning of the post-war depression, to 40,000,000,000 at the present time, with an unbalanced budget of 2,000,000,000. He says also that State and local public indebtedness raises this total to some 75,000,000,000 and that consequent increased taxation, inflation and decrease in the standard of living may readily include a program of dollar devaluation and "soaking the rich," with the accompanying depreciation of bonded indebtedness and "real" property. A long-continued war with an increase of public indebtedness and a tremendous increase in taxation may be followed by a different social organization than the one we know at the present time.

I cannot feel so gloomy about it because we are more observant than we were in the last war; our knowledge of events is clearer, we have had the experiences of the last world war to go through and may not have an extreme increase in the production of war supplies, with consequent post-war depression, and we can sit back rather comfortably and watch events so closely that, no matter what does come, we will be prepared for it.

Mr. Phillips, in the proceedings of the thirty-second Annual Convention of Life Insurance Presidents, made a study of the changes of investments of life companies, indicating internal correction of their investments. He said a couple of rather interesting things: First, that the foreign bonds held by life insurance companies are about 2% of the whole and are restricted almost altogether to Canadian bonds—very little European. He gives the present percentage as 12.1% railroad, 12.8% public utilities, 5.7% other bonds and stocks, government bonds of the United States 17.9%, municipal 5.8%, foreign 2%; mortgages—3.1% farm, 16.3% urban; policy loans 12.1%, real estate 8%.

It appears to me that the long-time effect of war on casualty insurance will be noted to a greater extent in security values, com-

pany investments and in the mediums of exchange rather than in premium rates.

MR. THOMAS F. TARBELL:

When the President put me on his list and sent me a little note, I told him I would be very glad to think the matter over and if I had anything that seemed worth contributing I'd be very glad to do so. I made a few notes here and I find that practically everything that I had in mind has been covered by previous speakers, particularly Mr. Mills. There is, however, one phase of the matter which I think is what the President has in mind.

In general, assuming of course that we are going to have a war of reasonable duration, there will be increased industrial activity. It won't be probably quite as chaotic as that in connection with the last war for the reason that the last war came out of a clear sky, so to speak, whereas it has been pretty well felt for a year or more that this present war was inevitable. I think that is particularly true of England and France, and that they had been making certain preparations, in particular an increase in the manufacture of airplanes. As I understand it, very quietly plans were made in Canada materially to speed up production of airplane parts and other war materials. I think we can assume, however, that in workmen's compensation there will be an increase in payrolls, and that there will probably be some increase in accident frequency, but probably not a commensurate increase in accident severity. Production, so to speak, will be more "under control"; accident prevention will be better organized—has been better organized.

The immediate effect upon the results of casualty insurance—that is, the effect on profit or loss—will probably be either unfavorable or at least not favorable, for the reason that there will be a lag in the collection of earned premiums. At the present time there is evidence that advance premiums on compensation insurance are on a depressed level, and they will probably continue to be depressed. Of course, ultimately, the earned premiums will catch up, and in due course I assume that the companies will show substantial profits from the compensation business. However, I think one of the things we must bear in mind is that those profits, if they do materialize, will not be permanent; they will not be retained, because under the present plan of determining compen-

sation rate levels, we cannot probably anticipate more of a profit than that provided for by what you might call the "minimum contingency loading." Therefore I think that we should make sure that if we do show substantial profits, we shall lay them aside and use them to apply against unfavorable experience that will follow. The incidence of loss ratios, so to speak, is not current. In other words, there is a lag that will have a material effect on the results from year to year.

In general (and this has been observed), I think there will be an increase in our premium volume right along the line in casualty insurance.

Another factor which must be kept in mind is that if prices show a material rise as the war continues, this will, of course, have an adverse effect upon the loss experience ratios of the companies and then, after the war is over, we will be in for a period of readjustment. There will probably be a decrease in volume, and the companies will be faced with, not only lower rate levels for compensation, but with the problem of getting their expense ratios in line.

At the present time there has been some evidence of increased premium volume, particularly in the surety line. The war material contracts that are being let in this country are mostly covered by surety bonds, and so far as I can find out the only companies which are making much gain in premium lines are those which are transacting the bonding business.

MR. HIRAM O. VAN TUYL:

After Mr. Mills had spoken and after Mr. Tarbell had "mopped up," there wasn't very much left of my original remarks that hadn't already been brought out.

I am impressed with the fact that casualty insurance is a composite business. We are affected by business activity in all different lines, and it is the composite effect that has its influence upon the financial statement and upon the production figures and on the underwriting, and not just one particular business.

We realize that, as a result of the present war, there will be a dislocation of business. Not all industry will benefit. There will be, in export lines particularly, a great deal of cutting down. I noticed in this morning's paper a reference to the effect of the war

on the shipment of fruit. It appears that exports of this kind to England will be much reduced, as they will be buying missiles of a harder character. So, while the armament industry will increase (and that will have its outreach in many lines of business), yet there will be many lines which will suffer. But it is the average which will, finally, influence casualty insurance.

Then, there is the lag which we realize occurs in all casualty insurance. We do not feel immediately the effect of an increase or decrease in business activity; it takes some time. In the matter of payrolls, our losses will come in much more promptly than the increase in payrolls or the effect of additional employment or of increasing wage levels.

If we were providing insurance for only one industry and had to estimate what is going to happen, we might have more occasion for worry than we do in a business which is influenced by the combined effect upon business as a whole of many diverse factors. For instance in the last issue of "Business Week" in regard to the copper industry there appeared the following, "Foreign demand for copper, particularly, has been brisk, despite the fact, right now, that little metal is being wasted in warfare. Yet those in the trade who face facts haven't any more than the foggiest notion where they're going. Big customers like the brass fabricators, electrical equipment and others, are doing an excellent business, yet the copper producers don't know whether the big buying of the metal has been in any large measure protection against price rather than protection against real demand. In a world which worries one day about passive war and the next about inconclusive peace, the problems will persist." We are in a fortunate position perhaps in being able, at present at least, to look at the question somewhat philosophically.

There is one phase of the effect of the war which has not much more than been touched upon, and that is the effect upon the price of securities. It would seem as though, in the realm of bonds, we had seen good grade bonds at about as high a price level and as low an interest rate as we will ever witness and it would seem the only direction in which bond levels could proceed would be downward and that there might be some increase in the interest rate. However, I was talking this morning with our investment secretary and he was quite definitely of the opinion that, due to the

vast hoard of gold which exists in this country and which is the main factor in determining interest rates, and the fact that we might see an increase in the amount of that gold rather than otherwise, there was not much likelihood of an increase in interest rates, although of course we must recognize that the continuance of the war over a long period of time might bring about inflation in spite of the fact of the existence of this gold.

We are all deeply concerned as to the long term effects of this war not only upon casualty insurance but upon our entire business, social and political economy. In this connection, it is illuminating to read the recent report to the stockholders of one of our largest automobile manufacturing companies which contains the following statement:

"The belief that war is a profitable enterprise is entirely without any basis of fact. It is true, as has already been stated, that it causes a temporary stimulation of activity. It requires the most intensive effort on the part of the productive plants of those who are involved, and in the world of to-day, closely integrated as it is economically, even those who may not be directly involved like ourselves are necessarily importantly affected. But irrespective of all the facts and circumstances, all ultimately lose. The destruction of wealth can never, in the final analysis, lead to a better order of things; a lower standard of living must result. Years of readjustment necessarily follow the declaration of peace."

"In other words, there must inevitably be an accounting; a price must be paid in some form or other. As applied to our domestic problems, the present emergency is most unfortunate from the standpoint of our long-range economic position for the reason that it lulls us into a feeling of false security. The facts are—and they must be faced, sooner or later—that the economic policies which have so prejudiced our progress and stability still remain, and in the inevitable final accounting the aftermaths of the present emergencies are bound to reassert themselves in exaggerated form."