REVISION OF WORKMEN'S COMPENSATION RATES (JANUARY-MARCH, 1917).

BY

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The recent revision of rates for workmen's compensation insurance should be of particular interest to the members of this Society. It is to be hoped that in due time complete details of the work will be available. In what follows, however, on account of the volume of material developed, it will be possible only to deal with the more important aspects of the subject, and in particular with those involving the application of actuarial principles.

The year 1916 is believed to have produced in this field underwriting losses of serious proportions. It is known that industrial pressure due to the war which commenced about the middle of 1915, greatly increased during 1916 and produced abnormal accident frequency. Green help, crowded factories, long hours have been contributing conditions. A survey of the situation as developed from a special inquiry instituted by the New York Insurance Department was, on December 8, 1916, presented to the companies operating in New York. It showed the following comparison of results for the two years of issue—1914 and 1915. Owing to the immaturity of the data the figures must be regarded as indicative rather than conclusive.

COMPENSATION LOSS EXPERIENCE UPON POLICIES EFFECTED IN 1914 AND 1915 —NEW YORK BUSINESS ONLY.

	Policy Year 1914.	Policy Year 1915.
Aggregate earned premiums	$13,313,559	$10,754,213
Total incurred losses	6,828,758	7,329,813
Indicated loss ratio as of September 30, 1916.	51.29%	68.16%

In the meantime, the companies themselves had become concerned with the rate situation generally and a movement was inaugurated by the National Workmen's Compensation Service Bureau to meet, by means of a general rate revision, a recommenda-

tion favoring increased rates, made by the New York Insurance Department. The membership of the bureau comprises the leading stock liability insurance companies of the country. It has not, up to the present time, admitted to membership mutual companies or other insurance carriers, although a start has been made in the direction of broadening its rules for eligibility. Recognizing that the situation called for general representation, the Bureau proposed that the Standing Committee on Workmen's Compensation Rates, appointed in March, 1916, by the Massachusetts, Pennsylvania and New York Insurance Departments, should be designated to undertake the work. This arrangement was finally made, the membership of the standing committee, however, being increased for the purpose from seven to eleven. As finally constituted the committee consisted of the following members:

American Mutual Liability Insurance Company,
Employers Liability Assurance Corporation,
*Employers Mutual Insurance Company,
Fidelity & Casualty Company,
Globe Indemnity Company,
Massachusetts Employees Insurance Association,
Maryland Casualty Company,
*Millers Mutual Casualty Insurance Company,
New York State Insurance Fund,
Travelers Insurance Company,
*Utica Mutual Compensation Insurance Corporation,
New York State Insurance Department (chairman).

This arrangement gave to stock company representation five votes, to mutuals four, to the State Fund one. The chair voted only in case of tie.

The committee proceeded to create an actuarial sub-committee, to which appropriate subjects were referred for research and report to the standing committee, as follows:

American Mutual Liability Insurance Company,
Fidelity & Casualty Company,
Massachusetts Employees Insurance Association,
New York State Insurance Fund,
Royal Indemnity Company,
Travelers Insurance Company,
Massachusetts Insurance Department (chairman).

* These three considered as two for voting purposes.

On the part of the National Workmen's Compensation Service Bureau it was stipulated that the revision should be expeditiously conducted and completed and also that the sessions be held at the offices of the Bureau in New York where the facilities for a work of such character were at hand.

The difficulties encountered were largely technical and non-competitive and the general atmosphere of the conference was harmonious and co-operative. A resolution was adopted providing: "that as soon as the present work of rate revision is completed, this committee proceed with the development of plans calculated to produce statistical information which will serve as the basis for an exact determination of all collateral questions relating to rate making, the committee to meet for such time as may be necessary to determine these issues, the results of their conference to be transmitted to the various insurance departments and bureaus interested."

The 1915 conference established basic pure premiums for the classifications (numbering about 1,300) contained in the compensation manual. With some exceptions, due to local conditions, the rates based thereon were put into effect in various states during the first half of 1916. It now appears that this action lagged behind the changed conditions brought about by the European war and that a higher rate scale should have been sooner adopted. Industrial pressure began to be felt about the middle of 1915 and was in full swing by the first of July, 1916.

The rates produced by the 1915 conference may be said to represent the first efforts made to combine experience data of several states. Earlier rates were chiefly conjectural and were determined almost wholly from Massachusetts and New Jersey data. The original rates for New York and for other states which adopted compensation laws between the summer of 1914 and the fall of 1915, come within this designation.

The work of the recent conference resolved itself into the following separate activities:

1. The application of an increase to the existing level of rates for the purpose of producing general adequacy of premiums.

2. A readjustment of the basic pure premiums with a view to minimizing inconsistencies due to earlier errors and lack of adequate statistical data.

3. Revision of manual rules wherever necessary to bring about

further standardization of procedure and to provide for improved methods of underwriting special hazards.

Items 2 and 3 were accomplished by the principal committee, the actuarial subcommittee furnishing the data in form for use in determining pure premiums. Item 1 was the subject of an extended study, by the subcommittee, which formed the principal basis for the new rates.

Combination of Experience Data.

The first problem presented involved the question of reducing the experience data, derived from several states with compensation laws of varying durations and having unlike benefit schedules, to a common basis. The discussion which developed over this question brought out widely differing views. Finally, after several suggested methods had been exhaustively debated, it was voted to proceed as follows:

Using the Massachusetts Act of 1912 as the standard, law differentials were computed with reference to the Standard Accident Table of Dr. Rubinow. Taking these as divisors, the actual losses for each state were reduced to the basis of the Massachusetts Act of 1912. These divisors and the corresponding reciprocals are given in the subjoined table along with the aggregate experience data available for each state. Special factors introduced for New Jersey and Illinois are in recognition of the absence of administrative control of claim settlements in those states.

State.	Reduction Factors.		Reciprocals.	Data Available.	
	Proposed Divisors.	Special Factors.	(Reduction Multipliers).	Payroll.	Losses.
Michigan	1.04	.....	.961538	$ 298,665,450	$ 1,780,423
New Jersey	.97	1.10	1.134021	326,826,653	1,376,179
Illinois	1.37	1.05	.766423	477,725,599	2,982,212
Connecticut	1.27	.....	.787402	87,947,831	394,586
Iowa	1.12	.....	.892857	36,451,041	164,078
Minnesota	1.18	.....	.847458	85,166,975	513,115
Rhode Island	1.01	.....	.990099	26,750,819	159,255
Wisconsin	1.60	.....	.625000	85,740,671	669,827
California	1.66	.....	.602410	209,963,040	1,498,126
New York	1.89	.....	.529101	1,131,304,828	6,574,951
Massachusetts, Part I.	1.00	.....	1.000000	1,212,533,164	4,755,663
Massachusetts, Part II.	1.40	.....	.714286	362,468,715	1,958,867
Total	.....	.....	.....	$4,341,544,786	$22,827,282

The procedure above indicated having been recommended by the actuarial committee, it was adopted by the conference. Mr. Albert H. Mowbray, who served on both committees, presented a dissenting report in which he contended for the employment of reduction factors derived from actual experience rather than from the standard accident table and for recognition of the principle that the law differential, instead of being constant for all classifications, should reflect the expectation of each type of loss provided for in the pure premium. This would have required an analysis of the pure premiums by type of benefit and the establishment of a differential representing each. Although the committee rejected this theory, the controversy which its introduction has stimulated is an indication that it has other sponsors and that it will in future be given further consideration.

In a brief review of this kind it is impossible to enter into a full discussion of the various factors which enter into the final multipliers developed for passing from the basic pure premiums to the rates for particular states. It will be sufficient to show what these elementary values are and the principles which they seek to recognize. The law differential is well understood and need not be further described.

Underestimates of Outstanding Losses.

After a careful review of this subject by the actuarial committee and upon its recommendation, the conference established a factor for underestimates equivalent to 2 per cent. of the incurred losses. Upon this point the reasoning of the committee is rather obscure. Estimates ranging up to 5 per cent. were proposed but evidently could not be supported by statistical data.

Increasing Cost.

This subject was subdivided so as to include (*a*) such increase as might be attributable to the age of the act in each state, and (*b*) abnormal industrial activity. The following factors were adopted:

(*a*)

Policy Year under Compensation Act.	Factors of Increasing Cost. (1)	(2)
1	1.00	.95
2	1.10	1.05
3	1.15	1.10
4	1.18	1.125
5	1.20	1.14

The difference between the two sets of factors is explained by the fact that the experience available to the committee was in varying stages of development. Column 2 contains the values applicable to the present experience data.

(*b*)

The allowance made for industrial activity has been fixed by the committee at 15 per cent. Satisfactory statistics upon which to base this factor were not available and the conclusion reached must be acknowledged as conjectural. Both factors reflecting increasing cost are combined additively and appear as a single factor in the final multiplier.

Occupational Disease.

The work of Mr. James D. Maddrill on this subject is already known to the Society. There has been no important new development since his valuable paper (*Proceedings,* Vol. II, p. 208) was presented and the committee has been guided chiefly by the results of his work, as follows:

For states where occupational disease is a cost element, a general differential of 1 per cent. is provided on all classifications. In addition a further differential is to be applied to selected classifications which present special occupational disease hazards, the sum of such extras to aggregate a further 1 per cent. of the pure premiums.

Effect of Schedule Rating.

The compensation rating schedule which is in general use has thus far resulted in a net decrease in premium volume. To offset the effect of this depression a correction factor has been provided applicable to those classifications which are subject to rating by schedule. For this purpose the conference adopted a loading of 9 per cent. In order to avoid the confusion of creating two sets of rates—one for classifications subject to schedule rating and one for those not so subject—it was decided to apply the correction to the pure premiums for the appropriate classifications.

Experience Rating.

A factor has also been introduced to correct the effect of experience rating which involves all classifications. Experience rating is limited to the larger risks and the net result of its application

is estimated at 1 per cent. of the entire premium volume. Theoretically the charge should be applied only to those risks which are subject to experience rating. In practice, however, it would be extremely cumbersome to do this. It is ingeniously argued that no unfairness results from this practical solution of the difficulty on the ground that experience-rated risks develop a net credit and hence are of a quality better than the average. Therefore, it is held reasonable to assume that the remaining risks are worse than average and as a group probably should be subject to a net debit. Like many other contentions encountered in rate-making, this one is not susceptible of tangible proof. The point is at present of little practical importance, however, and no harm can now result by conceding its possible validity.

Loading for Expense.

The 1915 rate conference determined upon 40 per cent. as the average loading properly chargeable under prevailing conditions to cover expenses. At that time the principle was introduced of modifying the average loading in order to reflect the variation in rate level as between the several states. Thus the loading for New York, where the scale of benefits, and hence the level of rates, are highest, was placed at 35 per cent., while for Pennsylvania—a state providing extremely small benefits, a loading of 42½ per cent. was adopted.

Following a plan similar to that adopted in 1915, the recent conference procured figures representing expenses incurred during 1916 by certain stock and mutual companies and arrived at the general conclusion that the indicated expense ratio had been 40 per cent. for the more highly organized stock companies and somewhat more than 18 per cent. for the mutuals. As the mutuals are largely dependent for dividend earnings upon lower expenses, the stock company figures have been customarily adopted in fixing the loading for both classes of companies. As in 1915, a difference in expense by states has been recognized and allowed for in the final multiplier.

While the principle of varying the loading percentage because of differing rate levels is now quite fully recognized in the calculation of rates for different states, the logical extension of that principle in its application to the particular scale of rates for a given state has not yet been adopted. One of the most important ques-

tions under discussion in the recent conference dealt with this very point and has suggested the paper by Mr. Joseph H. Woodward which appears in this number of the *Proceedings*. Owing to the pressure under which the rate revision was accomplished, there was little opportunity for a complete exposition of the subject. In connection, however, with the question of graduated law differentials, it was argued that the expense loading should vary in inverse ratio to the rate so that the resultant (if graduated differentials were used) would be a constant multiplier.

This was a convenient, if rough, assumption, but it failed to satisfy some of the members of the actuarial committee. A resolution was accordingly adopted calling for further study of the subject. Also, on an objection raised to the use of flat law differentials in projecting rates the actuarial committee reopened the matter and finally concluded that the graduated law differential and the graduated expense loading are correct in principle, that these two functions do not, when combined, produce a flat multiplier and as to the rates for New York (where the question had been raised) definitely recommended the adoption of the newly enunciated principles. The conference committee, however, was not so greatly impressed with the innovation and by a close vote rejected it—principally because it would have produced greater increases in the rates for the more highly rated classifications. Notwithstanding the action taken, the prominence given to this line of inquiry is an indication that on another such occasion there will be brought into the rate calculations a definite recognition of these two principles, viz:

1. That the law differential is not constant for all classifications but is a variable dependent upon the relative weight of each particular benefit contemplated by the pure premium.

2. That expenses should be assessed with reference to the magnitude of the rate with, possibly (as suggested by Mr. Woodward), the addition of a constant in the form of a policy fee.

For a clearer understanding of the problem which has given rise to these two questions, it should perhaps be stated that the first involves both the reduction of experience data to a common basis and the subsequent treatment of the basic pure premiums in the calculation of rates. The second is a logical refinement of the method heretofore followed in roughly assessing expenses as a flat percentage of the premium charged. The rapid development of more scientific rate-making in compensation insurance makes a

thorough and early investigation of these two questions exceedingly desirable.

The final conclusions of the committee with reference to expense loadings are expressed in the following table which, for convenience, includes a statement of the treatment adopted by the conference of 1915:

EXPENSE LOADINGS.

	1915.	1917.
Average expense loading (all states) expressed as percentage of gross rates	40%	40%
Allocated in the following manner:		
States with law differentials of less than 1.25	42½	42½
States with law differentials from 1.25 to 1.49	40	40
States with law differentials from 1.50 to 1.74	37½	37½
States with law differentials of 1.75 and over	35	36

The foregoing figures include no allowance for profit or for special expense incurred for the maintenance (as in Maryland and New York) of a state industrial commission.

MAINTENANCE OF STATE COMMISSIONS.

In addition to the usual premium taxes and license fees certain states impose upon insurance carriers a special assessment to cover the expense of maintaining an administrative board which supervises claim settlements. In Maryland and New York the assessment is based upon the amount of compensation paid during the year. In Kentucky there is a specific tax of 4 per cent. upon compensation premiums. Loading factors have been provided for New York (1½ per cent.) and Kentucky (2 per cent). The estimate of expenses for Maryland was not available when the conference adjourned.

PROFIT.

The principle that a margin for profit should be provided in the rates for stock companies was given recognition by the 1915 conference. At that time, however, no provision therefor was included in the rates. The stock company representatives this year reported in favor of a loading of 1½ per cent. which was taken to be the equivalent of 5 per cent. earnings upon such part of invested insurance capital as is subject to the risks of workmen's compensation insurance. Potential profits from favorable underwriting and from invested assets have not, apparently, been considered in connection with this subject.

Catastrophe Hazard.

The recommendations of the 1915 conference in this respect have been confirmed and an addition of 1c per $100 payroll has been provided for states other than New York, where it is fixed at 2c. This charge is imposed as a constant on the gross rate for all classifications. In the absence of reinsurance facilities the sums available from this source to many companies would fail of its purpose although in the aggregate it is probably sufficient. The cost of catastrophe reinsurance and the loading fixed for the hazard are wholly unrelated quantities. Small companies must have such reinsurance but cannot expect to be reimbursed out of their premium income for its cost. Companies having ample resources and a large volume of business can get along without it. The hazard, while remote, is real and must be allowed for. At the same time, competitive conditions do not admit of the assessment of a catastrophe loading in proportion to its value for the individual company. The provision made by the conference must be regarded as the recognition of a principle rather than as a rational basis for assessing the cost.

Final Multiplier.

The combined effect of all factors which operate upon the basic pure premium to produce the manual rate is expressed in a multiplier of the general form:

$$p(1+e_1)(1+e_2)(1+e_2)\cdots(1+e_n)+K=P,$$

where:

p = pure premium per $100 payroll,
P = gross premium,
e_1, e_2, etc. = various percentages of the pure premium,
K = a constant, already loaded for expense.

For illustration the values for New York are substituted in the formula as follows:

$$p(1.89\times 1.275\times 1.02\times 1.01\times 1.64)+.02=P,$$

where

1.89 = law differential,
1.275 = increasing cost factor,
1.02 = allowance for underestimates,
1.01 = allowance for experience rating,
.02 = catastrophe loading.

The factor 1.64 is obtained by combining (*a*) the expense loading (36 per cent.), (*b*) the special charge for expense of maintaining the State Industrial Commission (1½ per cent.) and (*c*) the profit loading (1½ per cent.)—all of which are assumed to be incurred as a percentage of the gross rate—in the following manner:

Expense—regular	.36 of gross rate
Expense—special	.015 of gross rate
Profit	.015 of gross rate
Total	.39 of gross rate

And,

$$\frac{1}{1-.39} = 1.64 \text{ (in terms of the pure premium).}$$

As before explained, the loading for schedule rating enters into the rate as a modification of the pure premium. The final multiplier for New York upon the foregoing basis is 4.07, the catastrophe constant of $.02 being added after multiplication.

Application of Tests.

In accordance with the plans of the conference, the basic pure premiums determined from the combined experience have been applied to the aggregate payroll exposure and to that of individual states. The data have been arranged in groups corresponding to certain basic pure premium magnitudes and the projected losses (obtained by applying the basic pure premiums against the payrolls) have been compared with the actual losses for each group and for the total experience. According to the records of the conference, four separate tests were applied:

1. A comparison to determine the average change produced by the adoption of new basic pure premiums. The combined payrolls of the several states were multiplied by both the old and the new premiums for each classification. The resulting projected losses indicated a net variation of about ½ of 1 per cent.

2. A comparison of actual with projected losses, using the combined data. Payrolls were multiplied by the new basic pure premiums and the results compared with the actual "reduced" losses. The projected losses so computed were found to exceed the actual by a little over 8 per cent. As the rates based upon the combined data are, in practice, applied by states, this test is not particularly useful.

3. A comparison to determine to what extent the newly selected pure premiums reproduce the actual losses developed under Massachusetts Schedule Z (Part I thereof—Act of 1912). As will be seen from the subjoined tabulation, the ratio of actual to projected losses for the entire data is practically 100 per cent. The departure is very slight excepting in the first pure premium group:

MASSACHUSETTS—PART I.

Act of 1912.

Group No.	Basic Pure Premiums.	Payroll.	Ratio of Actual to Projected Losses.
1	.03 to .10	$ 203,543,866	.732
2	.11 " .20	231,579,391	.964
3	.21 " .34	263,914,963	.989
4	.35 " .47	154,646,275	1.004
5	.49 " .67	87,544,722	1.006
6	.71 " 1.23	70,149,529	1.035
7	1.29 " 1.78	16,721,762	.997
8	1.86 " 7.42	31,774,296	1.025
	Total	$1,059,874,804	1.008

4. A comparison based upon the experience of individual states. These tests, as made by the conference, were limited to Massachusetts and New York data.

(*a*) MASSACHUSETTS EXPERIENCE.

This test was made in order to obtain an indication of the differential actually experienced under the amended Massachusetts Act of 1914. The principal results follow:

MASSACHUSETTS—PART II.*

Act of 1914.

Group No.	Basic Pure Premiums.	Payroll.	Ratio of Actual to Projected Losses.
1	.03 to .10	$ 70,528,065	.924
2	.11 " .20	63,778,827	1.412
3	.21 " .34	65,254,028	1.362
4	.35 " .47	53,937,436	1.317
5	.49 " .67	27,702,644	1.643
6	.71 " 1.23	22,715,023	1.422
7	1.29 " 1.78	6,512,776	1.125
8	1.86 " 7.42	7,834,545	1.440
	Total	$318,263,344	1.388

(*b*) New York Experience.

The purpose of this test was to determine the differential actually experienced under the New York law (Schedule Z—Policy Year, 1914).

New York—Original Act.*

Group No.	Basic Pure Premiums.	Payroll.	Ratio of Actual to Projected Losses.
1.....	.03 to .10	$ 423,227,053	.915
2.....	.11 " .20	154,468,057	1.418
3.....	.21 " .34	109,283,555	1.368
4.....	.35 " .47	134,346,408	1.451
5.....	.49 " .67	96,859,375	1.583
6.....	.71 " 1.23	75,206,623	1.645
7.....	1.29 " 1.78	13,738,789	1.476
8.....	1.86 " 7.42	26,797,420	1.828
	Total.....	$1,033,927,330	1.533

Particular attention was focused on the New York test by reason of the discussion over the question of graduated differentials. The New York Insurance Department made further tests to discover how the new basic pure premiums would affect the New York rates at various rate levels.

The first of these, using the same grouping as above, indicated for several groups a decided departure from the average differential. The comparison was made by taking the indicated experience differential of 1.533 and multiplying it into the projected losses derived from the basic pure premiums. The results were then measured against the actual New York losses, as shown below:

Group.	Basic Pure Premium.	Actual Losses.	†Projected Losses.	Discrepancy Per Cent.
1.....	.03 to .10	$ 211,518.00	$ 354,249.00	67.5
2.....	.11 " .20	349,974.00	378,410.00	8.1
3.....	.21 " .34	390,676.00	437,760.00	12.1
4.....	.35 " .47	802,308.00	847,378.00	5.6
5.....	.49 " .67	893,609.00	865,228.00	— 3.1
6.....	.71 " 1.23	1,071,207.00	998,133.00	— 6.8
7.....	1.29 " 1.78	291,645.00	302,987.00	3.8
8.....	1.86 " 7.42	1,069,466.00	897,018.00	—16.1
	Total.....	$5,080,403.00	$5,081,163.00	

* The foregoing tests were made before the conference had completed its determination of premiums, a fact which accounts for the discrepancy in the aggregate figures.

† Projected losses on Massachusetts basis × 1.533.

It will be noticed that the method of grouping adopted by the conference follows no particular scheme, the data merely being subdivided into eight parts. A regrouping was subsequently made by the New York Insurance Department, the effort being to produce groups having approximately the same volume of actual losses. The lowest pure premium group (under .05) has been omitted:

No.	Group.	(1) Payroll.	(2) Actual Losses.	(3) Projected Losses.	(4) Experience Differential (2)÷(3).
1....	.05 to .21	$423,165,678	$ 665,889	$ 493,398	1.350
2....	.23 " .41	140,671,789	617,263	454,394	1.358
3....	.43 " .51	88,808,192	603,565	410,861	1.469
4....	.54 " .64	70,147,883	668,134	419,026	1.594
5....	.67 " .81	45,129,693	546,692	331,033	1.651
6....	.85 " 1.29	39,964,803	651,685	404,775	1.610
7....	1.35 " 1.95	18,703,110	555,568	311,994	1.781
8....	2.04 " 7.09	18,855,649	753,738	432,378	1.743
	Total.....	$845,046,797	$5,062,534	$3,257,859	1.554

The trend shown in column (4) above is significant as well as interesting. The lower rate groups develop low differentials, which increase with the pure premium. These results have been graduated by a graphic method and yield a remarkably smooth and consistent curve.

The argument against the use of graduated differentials derived in the foregoing manner hinges upon the fact that all rates of the same magnitude do not necessarily contemplate the same *quality* of loss, and hence may require varying differentials.

As an example let us assume two classifications, "*A*" and "*B*," for which the basic pure premium is $1.00. Also let us assume the following rough subdivisions:

PURE PREMIUM FOR BASIC STATE.

Type of Benefit.	Classification "*A*."	Classification "*B*."	Actual Law Differential.
Death.....	$ .10	$ .40	2.50
Permanent partial disability.....	.20	.30	2.00
Temporary disability.....	.30	.20	1.50
Medical.....	.40	.10	1.20
Total pure premiums.....	$1.00	$1.00	

The corresponding pure premiums for the secondary state would then be as follows:

PURE PREMIUM FOR SECONDARY STATE.

Type of Benefit.	Classification "A."	Classification "B."
Death	$ .10 × 2.50 = .25	$ .40 × 2.50 = 1.00
Permanent partial disability.	.20 × 2.00 = .40	.30 × 2.00 = .60
Temporary disability	.30 × 1.50 = .45	.20 × 1.50 = .30
Medical	.40 × 1.20 = .48	.10 × 1.20 = .12
Totals	$1.58	$2.02

Thus, for Classification "*A*" the correct differential is 1.58 and for "*B*" it is 2.02, notwithstanding that both classifications take the same *basic* pure premium.

Using either average differentials or those produced by a graduation based upon rate magnitude, premiums for the secondary state bear a constant relation to corresponding basic pure premiums having the same arithmetical value. That is, all classifications having a basic pure premium of $1.00 take the secondary pure premium $(1+k)\times\$1.00$ where k equals either the general constant differential applicable to all classifications or the specific constant applicable to the basic pure premium of $1.00. Using sectional differentials, the factor $(1+k)$ is subdivided into as many of its component elements as may be found convenient, in accordance with the foregoing illustration.

The various tests which have been applied to the selected pure premiums are of value chiefly in that they indicate whether, in the aggregate, allowance has been made for future losses at least equal to those actually entering into the experience. What the conference contemplated, as shown by its records, was something more, viz: that detailed adjustments based upon the test indications should be applied to the pure premiums of each state. By such means it was expected that the effect of using constant law differentials and expense factors would, in large measure, be rectified. In this respect, however, the conference failed to carry out its plan, for such adjustments have not been made.

The actuarial committee has, in connection with this subject, a field for valuable work. Experience data from additional states will soon be available. Its value should not be impaired for want of a suitable and rational method of utilizing it in combination with other data.

SUMMARY AND CONCLUSION.

Based largely upon actuarial and statistical analysis and advice, the conference has brought about a general increase in rates which

is expected to yield sufficient additional income to meet changed conditions.

Readjustments have been made of the rates for particular classifications. Many of these readjustments are necessarily of a temporary character not only because of the absence of satisfactory experience statistics, but also because of changes which in the near future promise to arise in connection with the employment of such data in rate-making. Provision has also been made for special treatment in the rating of certain classifications which present unusual features such as chemical works (where under existing conditions the hazard of high explosives is likely to be encountered), subway, canal and other large construction contracts.

There have been brought into prominence new viewpoints with reference to methods of utilizing experience data in the determination of rates. In particular should be mentioned those involving the use of graduated law differentials and expense loadings in lieu of the present practice of applying single or constant multipliers. It is somewhat unfortunate that greater consideration could not, in the limited time available, have been given to this important subject. It is extremely probable, however, that in the next general rate revision it will not be brushed aside. The burden of premium cost should be equitably distributed in proportion to the risk value of each classification. That some classifications are bearing more than their equitable share while others are unduly favored is inherent in the prevailing methods of rate calculation.

A feature of the recent conference that should be mentioned is the co-operation which has resulted from the conjunction of elements having widely differing business interests and points of view. New developments in rate-making theory must eventually find expression in future rates which, in all probability, will be determined by some form of general co-operative effort. It would seem opportune, as well as desirable, if steps could be taken to place the entire problem of compensation rate-making in the hands of a permanent and fully representative body. There appears to be no good reason why fundamental principles should not be considered solely upon their merits, completely divorced from competitive considerations. A permanent organization, properly constituted, would be able to work out the solution of many difficult questions which are common to all classes of companies.