

DISCUSSIONS OF PAPERS READ AT THE  
MAY AND NOVEMBER 1953 MEETINGS

## COMPARISON OF WORKMEN'S COMPENSATION COSTS

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Volume XL, Page 10

DISCUSSION BY R. P. GODDARD

With characteristic modesty Mr. Johnson did not present his method for determining average manual rate index numbers until 1953, although his original studies were made in 1948. The publicity which has been given to his work indicates the need for index numbers of this type, which can be very useful for reinsurers, self-insurers and legislators. Compensation actuaries generally have shied away from the preparation of figures like these, which, from their very nature, do not lend themselves to actuarial niceties. There has been some hesitancy in setting aside the microscope in favor of the aerial camera and the field glasses, but if the industry itself does not prepare practical comparisons of Workmen's Compensation costs in the various states, others outside the industry will do it for us, with results which may be somewhat less than satisfactory.

Mr. Johnson has boldly, (and properly, in my opinion), rejected the idea of using all classifications in determining a grand average rate or pure premium as a basis of comparison. By selecting 45 typical classifications he has paved the way for a comparison of the actual effective benefit levels of the various states. True, Mr. Johnson does not claim that his tables measure variations in benefit levels, but his adherents may well make greater claims for his tables than he does himself. Certainly we cannot ignore a consistent relationship, year after year, in the levels of manual rates as an indication of the level of benefits.

If, then, we propose to compare the effective benefit levels of a group of states, we should rigidly exclude any local industries, such as Textiles in South Carolina or Oil Refining in Texas, which would reflect accident frequency or severity rather than benefit level. Our search should be for classifications which will fairly reflect the whole range of the Workmen's Compensation law and its administration. If we can find a group of classifications which are of approximately the same importance within each state, and from state to state, which have rates neither too high nor too low, and which reflect approximately the same accident-producing conditions in various parts of the country, we will have a satisfactory base for preparing index numbers.

With few exceptions, the 45 classifications selected by Mr. Johnson are admirably suited for the purpose at hand. One might question the inclusion of Clothing Mfg. since this is much more important in New

York than in most other states and, for exactly the opposite reason, the Foundry classifications which can be of much greater prominence in states like Pennsylvania and Michigan than in New York. One might also question the inclusion of Clerical Office Employees, because the rates are so low in some states that a change of only one cent can distort the final result. As a matter of fact, if we carefully picked a group of "abnormally normal" classifications which have no outstanding characteristics in any state and which have rates neither too high nor too low, we might be able to produce an unweighted index which would be satisfactory for all practical purposes. It would be safe to use such an unweighted index if the actual weights were practically uniform to begin with.

With this in mind a hasty test has been made of an unweighted index, using the classifications selected by Mr. Johnson, with the exception of eight which appear not to be typical in all states. The unweighted index numbers determined by the 1952 rates for these 37 classes are shown below, together with the comparable National Council Benefit Index and Mr. Johnson's Weighted Manual Rate Index.

	<i>National Council Benefit Index July 15, 1952</i>	<i>Weighted Average Manual Rate Index July 1, 1952 45 Classes</i>	<i>Unweighted Average Manual Rate Index July 1, 1952 37 Classes*</i>
New York	1.000	1.000	1.000
Massachusetts	1.129	.733	.714
New Jersey	.940	.547	.532
Texas	.743	.517	.493
California	.867	.504	.499
Wisconsin	1.234	.492	.463
Connecticut	.872	.478	.465
Missouri	.905	.415	.398
Maryland	.904	.358	.341
Illinois	1.021	.320	.325
Michigan	.928	.295	.276
Iowa	.849	.289	.266
Indiana	.861	.288	.273
Virginia	.837	.259	.255
Alabama	.691	.237	.222
Pennsylvania	.830	.213	.218

\*Same as the original 45 classes, but excluding, as not typical in all states, Clothing Mfg., Logging and Lumbering, Foundries (iron, steel and non-ferrous), Chauffeurs and their Helpers, Salesmen, and Clerical Office.

The similarity of the weighted and unweighted indices is at once apparent, and it remains only to comment on the figures for Texas, Wisconsin and Iowa, where the greatest differences occurred. The differences are attributable primarily to the inclusion of Class 8742, Salesmen, in the weighted index numbers. This class apparently had a relatively low rate in New York on July 1, 1952, and if this class had not been used, the difference between the weighted and the unweighted indices would have been less than .020 in every instance.

The introduction of the unweighted index numbers in this discussion is not intended in any way to detract from the value of the weighted index numbers where Mr. Johnson has dared to pioneer. Rather, it is hoped that the unweighted indices will corroborate the weighted and indicate the weaknesses of the National Council Benefit Index numbers, which must be misleading to a great many people. Undoubtedly the National Council figures had considerable value in the early days when there were many states without Workmen's Compensation laws, and some basis had to be found for an initial set of rates as each law was adopted. The need for this type of index number has now passed, and it would seem that the proper time has arrived for everybody to rally around some set of figures based upon actual manual rates which can be justified as accurate enough for the purposes at hand. We must all congratulate Mr. Johnson on his boldness in selecting a comparatively few classifications as a basis for his pioneering work. I would hope that we could go even a step further and experiment with unweighted index numbers which would do substantially the same job. The very simplicity of the result should not cause us to be afraid of it. As Mr. Johnson points out, there could actually be a great deal of actuarial science in the initial selection of the classes to be used but, once completed, we would have a very valuable tool which everybody could use and understand. I, for one, would be very happy to see a set of weighted or unweighted index numbers, based on manual rates, given official approval by the insurance industry as the standard method for comparing workmen's compensation costs.

## THE UNIFORM STATISTICAL PLAN FOR FIRE AND ALLIED LINES

BY CLYDE H. GRAVES

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DISCUSSION BY L. H. LONGLEY-COOK

Dr. Graves is to be congratulated on his clear and comprehensive paper describing the Uniform Statistical Plan for Fire and Allied Lines. The paper brings together in one place not only the details of the plan but also its historical development. This latter feature of the

paper is most valuable and will do much to help the student to understand the plan.

There is an allied plan, which is used by the National Board of Fire Underwriters but not by the Mutual Insurers, called the Statistical Plan for Expenses. It would be most valuable if someone would prepare a sister paper describing this plan.

Dr. Graves lists eighteen items to which consideration was being given by the N.A.I.C. in order to bring experience and rating systems in closer harmony. It seems desirable to set out in this discussion the results of this consideration as reported a year ago to the Rates and Rating Organizations Committee of the N.A.I.C. by the subcommittee of Casualty and Fire Insurance Rate Analysts of Zone 5.

"In regard to Item 4, (Amend the Dwelling and Apartment House definitions in the statistical plan to conform with the filed rating plan definitions.) the Bureaus informed the Conference that the proposed procedure is receiving attention and that adjustments are being made as rate revisions are filed."

"With respect to Item 5, (Collect experience for residential and farm property in accordance with the classifications and territories contemplated by the filed rating plans.) the Bureau representatives informed the Conference that the Farm Underwriters Association might furnish experience on farm property and the department representatives requested the respective rating bureaus to secure and furnish such information as soon as possible. Thus far, only two states, namely Kansas and Nebraska, have received the experience. The consensus of the Conference is that the experience on residential and on farm property should be recorded and reported according to the classifications in the schedules."

"With respect to Item 7, (Collect experience separately on property rated under the Analytic Schedule and property rated under Special Schedules, such separation to be in accord with the filed rating plans.) bureau representatives advised the Conference that separation is now possible and that the bureaus were in the process of compiling statistics in such form. The compilation is to be furnished to the states when available."

"On Item 9, (Collect Public Building experience in accordance with the definition thereof in states where special rate consideration is afforded such property.) it was pointed out that, for the most part, a segregation of experience on public buildings is available under the 115 Classifications of Occupancy Hazards statistical plan."

"With respect to Items 10 and 11, (Item 10 — Collect Automatic Sprinkler experience for "Manufacturing" and "Other than Manufacturing" risks by Normal and Abnormal classification, determination of such classification to be made by each

state.) (Item 11 — Collect “Superior Form” Automatic Sprinkler experience separately from ordinary sprinkler risk experience.) bureau representatives advised the Conference that additional information in regard to these topics is now available from Factory Insurance Association and from Improved Risk Mutuals; that such information would be furnished to the departments by the rating organizations and that the indicated adjustments would be made when the necessary data is compiled. To date this information has not been received by any state.”

“With respect to Item 13, (Collect Extended Coverage experience separately by Building and by contents.) the collection of extended coverage experience separately by buildings and by contents, the bureaus offered several reasons why there should be no rate differential and such experience should not be collected separately. The first reason was that there is more or less a catastrophe hazard involved. Another was that whereas the extended coverage contents rates have been the same as extended coverage building rates, there is with the introduction of the deductible, a differential in the premium rate because the deductible does not apply to contents but the contents rate is the same as the building rate with the deductible. A further reason was that the preparation of statistics to substantiate or disprove a further differential would require the broadening of classifications to a tremendous extent. The Chairman requested the bureau representatives to furnish such factual information as might be obtained from fire departments and from other sources. This information will be reviewed at a later time along with the Wisconsin and Texas results, which two states are now collecting experience separately for buildings and contents. However, no information has been received from the bureaus up to this time. According to informed sources, the extended coverage loss ratio on dwellings contents is a great deal lower than on the dwellings themselves.”

“As respects Item, 13, it is the consensus at this time that extended coverage experience on dwellings and extended coverage experience on contents of dwellings should be reported under separate codes in order to justify the extended coverage rate on contents and so that the statistics on each subject matter may be considered separately.”

“With respect to Item 14, (To facilitate the review of experience for ratemaking purposes, it is recommended that the statistical agencies combine the classes, the sums of which reflect the experience of the rating plan involved, and submit such combined total to the individual states.) the bureau representatives advised the Conference that provisions had been made for the consolidation of experience for rating class divisions and that consolidated underwriting experience would be furnished to the

individual states by the respective bureaus as soon as the compilation was completed."

"With respect to Item 16, (Should the fire rate differential between approved roofs and unapproved roofs on dwellings be abolished? If not, should statistics be collected to determine and justify a proper rate differential?) bureau representatives advised the Conference that a fire rate differential between approved and unapproved roofs was necessary because of the spark hazard and the conflagration hazard. Upon discussion it developed that the spark hazard has disappeared and there is no record of a recent dwelling conflagration anywhere in Zone 5. It was generally agreed that the differentials now in use are based upon judgment of long ago underwriters; that conditions have changed materially since the differentials were established; and that the differentials are without factual data or loss statistics for foundation. The rating bureau representatives offered to collect and furnish data on roof fires from fire departments and other sources as a means of formulating a factual study for the use of this Conference and the respective states individually. The Chairman requested that the data be forwarded at an early date but the information has not yet been received by any state. There is no information or reason to indicate or substantiate a continuation of a fire rate differential between approved and unapproved dwelling roofs and it is the opinion of the Conference that the differential should be abolished. It is the concensus of the Conference that if any consideration is to be given to the use of a differential in the future, the fire experience on dwellings with approved and with unapproved roofs should be recorded and reported separately in order that the proper differential may be determined and supported."

"In regard to Item 17, (Should there be a differential in the extended coverage rate on shingle roofs and on composition roofs?) it was felt that there is justification for a differential in the extended coverage rate on shingle roofs and on composition roofs. It is the concensus that statistics or other evidence should be gathered and reported, in order that the proper rate differential, if any, may be determined."

"With respect to Item 18, (Is the rate credit offered under the Automobile Filling Station Form No. 6 justified? What experience, if any, is available to support the credit? Should statistics be required to ascertain and support a proper credit?) the bureau representatives advised the Conference that they were prepared to submit experience to substantiate the rate credit. However, this experience has not been received by any state."

As so many of the members of the Society are mainly concerned with casualty insurance problems, it is as well to point out that the loss frequency in fire insurance is very different from that commonly

experienced in casualty insurance. For this reason the problem of devising a satisfactory statistical plan for fire insurance is, in many ways, more difficult than for many casualty lines. So many factors enter into fire insurance rate making that any attempt to provide in the statistical plan justification for each rate making factor is quite impractical. It serves no useful purpose to so subdivide the data that the resulting figures have little or no credibility.

Anyone who has attempted to make fire insurance rates is aware that the present statistical plan is not perfect, particularly in its treatment of the dwelling classes where the body of statistics is sufficiently large to provide credible answers to a number of important questions. Dr. Graves has limited his paper to a factual description of the plan and it would be wrong for me to wander into this wider field in my discussion.

When I say that the plan is not perfect, I do not wish it to be thought I am critical of the plan. The Uniform Statistical Plan is far superior to the corresponding plan for fire insurance in use in any other country. We can say with real assurance that we have a plan of which we can be proud. But it would be wrong for us to be content with what we have and not strive for something better in the future.