derwriting specialists comprising the Burglary Rating Committee of the National Bureau, it was the judgment of this committee that more detailed statistical data should not be collected for these less important subdivisions.

To supplement the authors' paper, this reviewer feels an explanation of how rate level data for the burglary lines are developed from company reports would be informative and helpful not only to students who will be using the *Proceedings* as a reference, but also to some members of the Casualty Actuarial Society who may be unfamiliar with this procedure.

Burglary Insurance experience is reported to the National Bureau on a unit transaction basis. These reports are submitted monthly and contain the full detail required by the Burglary Insurance Statistical Plan. Thus, the punch cards show the codes for policy form, term, territory, etc., as well as the written premiums and incurred losses. From these data we calculate the portion of the written premiums that is earned in the current year, as well as the contribution to the earned premium of subsequent years, depending on the effective date and the term of each policy. To reflect changes in manual rates, the earned premium summary cards for policies written prior to the date of the revision are separated from those for policies written subsequent to the date of the change. The rate change factors are applied to the earned premium contributions from policies written prior to the effective date of the change, but no adjustment is needed for the earned premium arising from policies written subsequent to the date of the change because such premiums already reflect the revised level of rates.

In conclusion, may I again say that Mr. Wolfrum and Mr. Richardson are to be congratulated on their excellent and valuable addition to the *Proceedings* of the Casualty Actuarial Society.

DISCUSSIONS OF PAPERS READ AT THE
MAY 1961 MEETING
RESERVES FOR REOPENED CLAIMS ON WORKMEN'S COMPENSATION

BY

RAFAL J. BALCAREK

Volume XLVIII, Page 1

DISCUSSION BY R. E. SALZMANN

Mr. Balcarek has presented a very interesting and thorough study on Reserves for Reopened Workmen's Compensation Claims. He is to be commended for contributing a paper to the *Proceedings* of the Society on loss reserves because very few papers have been presented on this subject in the past several years. Even though his paper pertains to only a small segment of the general subject, it is a welcome addition to the *Proceedings*.

The author sets forth a sound method of measuring the reopened claim

liability for his company. He develops a probability of reopenings in each of the eight calendar years after the year of closing. He also determines the relative cost of subsequently reopened claims as compared to the average cost of all claims closed in the applicable calendar year. With these two estimates of frequency and average cost, it is then a simple matter to calculate the reopened claim liability as of any year end.

The liability thus computed is an aggregate figure for all incurred years. Because of Schedule P requirements, this reserve needs to be subsequently allocated by policy year and incurred year. It therefore would be a desirable refinement if the same method could be applied in a manner which would produce reopened claim liabilities by incurred year (or policy year), thus leaving only a two-way split in the final computation. For Schedule P coverages it is always worthwhile to determine whether it is feasible to establish reserves by incurred year directly rather than as a portion of a total calculated figure. It would appear that Mr. Balcarek's method would lend itself to this treatment.

Mr. Balcarek's method satisfactorily answers the three questions which I believe should be asked of any loss reserve formula. These three questions are:

(1) Is it logical?
(2) Does it fit the applicable experience of the past?
(3) Will it respond properly to changes in operations or conditions whereby factors in the formula might be affected?

Answering the third question affirmatively is the most difficult test of any formula reserve method. Mr. Balcarek's method meets this test. Reopened claims have been thought to be sensitive to two particular items. One is unemployment and the other is the company's procedures for closing claims. The effects of *changes* in these items must be properly evaluated and provided for in the formula. The author accomplished this by first studying the correlation of reopenings with unemployment and found that there has been no significant correlation since the beginning of World War II. Assuming that extremely high unemployment rates are a thing of the past, the author was able to disregard this item in his formula. Mr. Balcarek provided for the second item by basing the probability of reopenings on the number of claims closed.

Because the reserve for reopened claims is a relatively minor part of the total loss reserve liability, it is important to emphasize simplicity. It is likely that a simpler method could be developed using dollars rather than frequency and average cost. To investigate this possibility, it would be necessary to make correlation studies of frequency and average cost. Due to the very low frequency involved, considerable fluctuation occurs in both the frequency and the average cost of reopened claims from year to year. Under these circumstances, it would be of particular interest to determine whether any significant correlation exists. If the correlation is negative, a simpler method, relating reopened loss volumes to losses paid on closed claims, should be studied and the results of the two methods compared.

The above comments pertain directly to the method described in the paper.

There are a few other items that were not fully covered in Mr. Balcarek's paper which I believe to be pertinent.

First, it was mentioned in the paper that "most companies make the reserve for reopened claims a part of the reserve for Incurred But Not Reported Claims." Although this may be a true statement, it implies that such a procedure is proper. Actually the liability for reopened claims should be included in column 1 of page 9 of the annual statement—"Adjusted or in Process of Adjustment." Column 4 on page 9 is limited to an estimate of claims not yet reported or known to the company. It is my belief that the assignment of reserves to column 1 or 4 is perhaps of no material consequence, because it is the accuracy of the total reserve in column 5 that really counts; nonetheless, it is well to point out that the reopened claim liability is not a segment of the INR liability—whether or not it is included in column 4—and thus its measurement should be quite independent of the measurement of INR liability.

Second, it should be noted that the method proposed in the paper could be adopted by other companies but not the specific formula or the relative cost values. These are only appropriate for the author's company. Reopened claim statistics vary from company to company depending upon claim closing practices.

The third item that should be pointed out is that the need for a separate reopened claim reserve exists only for those companies which use individual case estimates in compiling their aggregate loss reserves. Because individual case estimates provide for *reported and open* loss reserves, additional reserves for reopened claims—and another for additional payments—are necessary to make up the total liability for reported claims. For companies using a formula basis to measure their reported loss liability, the entire liability is provided for in the formula. The elimination of coding and recording reopened claim data is one of the several advantages of the formula reserve method.

In conclusion, Mr. Balcarek's paper will add to the somewhat meager reference material on the complex subject of loss reserves in our *Proceedings*. It is hoped that this paper will stimulate interest and encourage others to present papers on other facets of loss reserving techniques.

A STUDY OF THE SIZE OF AN ASSIGNED RISK PLAN

BY

FRANK HARWAYNE

Volume XLVIII, Page 9

DISCUSSION BY P. S. LISCORD

"What can be expected as the normal size of the New York Automobile Assigned Risk Plan?" Mr. Harwayne attempts to answer this question by reducing the acceptance or rejection by underwriters of automobile risks in the