ited to a reference to Paul Benbrook's paper in the *Proceedings*[2] and Richard Lino's review.[3] The calculations shown in those sources are designed primarily for calendar-accident year data, however. While the transition to a policy year base would not be particularly difficult for the reader to make, it would have been helpful had an actual calculation been shown. And, as in the case of the loss development factors, there is no indication as to what paid loss experience is used.

2. Secondly, it is not intuitively obvious why some sort of trend factor should not be used for those sublines where the exposure base is payroll. While inflationary pressures admittedly affect both claim costs and wages, the effect is not necessarily the same. Claim values are tied in part to medical costs which have been spiraling at a rate much greater than the economy as a whole. The outlook in the near future is perhaps even worse. Pain and suffering awards have been increasing rapidly. While the use of basic limits losses does have a truncating effect on the inflationary increase in claim costs, the payroll limitation has a similar effect on payroll, especially in the handful of states still using the $100 rule. These problems have undoubtedly received the attention of the staff and committees of the National Bureau, but it would have been informative to give a more expanded treatment to this problem.

In spite of the above examples and the other areas in which one might have wished a more detailed treatment, Mr. Lange has presented a valuable paper for both students and actuaries, providing good insights into the problems and procedures of general liability ratemaking. Such papers have, however, the discouraging tendency to become outdated in an amazingly short time. As Mr. Lange says in his conclusion, "General liability ratemaking procedures are in a constant state of flux." We sincerely hope that he will provide us with frequent supplements to this paper.

DISCUSSION BY S. C. DU ROSE

The author presents an explanation of general liability insurance rate making and rate filing procedures of the National Bureau of Casualty Underwriters. To this extent, the paper is of substantial value to the student or other interested person.

In my initial reading of the paper, I was bothered by the absence

[2] *PCAS, Vol. XLV* (1958), page 20.
[3] *PCAS, Vol. XLVI* (1959), page 301.

of a definition of the terms used by the author. For example, the term "line of insurance" apparently is used at the beginning of the paper in the same sense as the term "subline of insurance" in the latter part of the paper. It would have been most helpful in my reading if the author had in the beginning presented a statement of the purpose and scope of the paper and a statement or definition of the terms to be used.

In respect to the author's discussion of rating techniques and class rating I believe that he has inadvertently broadened the scope beyond that which can be treated effectively in a single dissertation. Several points which are important to an understanding of the rationale are left unexplained. In some cases, he tended to be too general or nonspecific in the use of terms in places wherein a specific statement or precise term would be required to make the statement accurate or convey the proper meaning. As an example, the author makes the statement that liability and fire insurance rates "are influenced by the business of the insured occupying the premises. . . ." In my opinion, it would be more correct to state that rates are influenced by the "hazard" of the insured. The hazard is the quantity that the rate attempts to measure. Reference is made to "liability" imposed by workmen's compensation insurance statutes. A more precise description might be to use the phrase "obligation imposed by the Workmen's Compensation Insurance Statutes." In its common usage, liability contemplates payment for injury as a result of negligence of the insured whereas workmen's compensation insurance is founded on the premise that payment be made irrespective of negligence.

In the discussion of class rating, the author states that the experience rating plan applicable in most states provides credits and debits for certain general management characteristics. I believe that a more accurate explanation would be that a premium modification based on management characteristics is provided by the schedule rating plan. The experience rating plan would generally provide for premium modification based on a formula which involves the premiums and losses developed by the risk in a specified period of time.

The author attempts to draw a parallel or analogy with fire insurance rating schedules. Apparently he is referring to the Mercantile Schedule commonly used in the eastern part of the United States, but he has failed to so identify the schedule to which he refers. While his rationalization may be accurate and true in respect to the Mercantile Schedule, in my opinion it is not appropriate with respect to the Analytic System for the Measurement of Relative Fire Hazard, otherwise known as the Dean

Schedule, which is used in some 20 midwestern states. His discussion may be somewhat more appropriate in relation to the General Basic Schedule in use in several western states but probably still lacking the degree of accuracy or precision desirable.

The opportunity to explain or define the basis for conclusions presented are frequently overlooked. The author states that it is considered statistically impossible to determine the appropriate credits and debits in a fire rating schedule, but he offers no statement or explanation as to why this may be true. In a similar fashion, he states that "Individual risk rating techniques similar to those which apply for Workmen's Compensation are used for general liability insurance" without identifying the specific individual risk rating techniques to which he is referring.

In general, there is no description or explanation of the exposure base to which the rate is applied to produce premium. That which is given is usually nonspecific. No mention is made of the rate making problems involved with the use of fixed exposure bases such as area or frontage. I believe that this paper would be much more crisp and informative and to the point if the author would have presented a brief discussion of the various exposure bases and how such are involved in the rate making process.

The rate making procedure suggested for manufacturers and contractors liability insurance which incorporates a national loss ratio factor would appear to be vulnerable to attack on the basis that loss ratio reflects the relationship of premiums to losses but does not necessarily reflect the emergence of or trends in claims and losses. If the suggested plan were to be followed, the rate level of a given state would be pitched to the degree of inadequacy or excessiveness of rate levels of other states without consideration of the existence of a correlation between rate levels and loss costs.

It is my opinion that the presentation suffers by reason of the inclusion of the author's attempt to rationalize or compare general liability insurance rate making with fire or workmen's compensation insurance rate making. The paper does have value and is a contribution to the works of the Society in respect to the discussion of general liability insurance rate making.

AUTHOR'S REVIEW OF DISCUSSION BY MR. Du ROSE

Mr. S. C. Du Rose has made a number of suggestions for the improvement of my paper on general liability insurance ratemaking. Since most