as Q increases). Thus, the price the Dental Plan pays for their protection is in terms of an exceedingly slow rate of growth.

In due time, as the volume of business increases and as the business on the books matures (loss ratios stabilize), the point may be reached where the Dental Service Plan has a year-end surplus which equals or exceeds 10% (W) of the incurred losses on all of the premium accounts business, in which case the Dental Plan's retention will reach 100%. However, the moment at which total recapture is achieved may be so far in the future that the reinsurance agreement becomes a losing proposition as far as the Dental Service Plan is concerned. As a possible solution, a time limit on the agreement could be resorted to; but, understandably, it would be extremely difficult, if not impossible, to determine an equitable limit based upon actuarial methods. A "gentleman's agreement" may be the best recourse.

AUTHOR'S REVIEW OF DISCUSSION

I concur with Mr. Stevens' comment that the formula as it appears in the paper is somewhat overburdened with numerous variables. Most of these variables were introduced to represent those monetary elements which could affect the operating results of the Dental Plan.

In developing the initial approach to this reinsurance problem, the basic formula contained only those elements which were critical in establishing whether the sharing between the two corporations was equitable and feasible.

The first pass at the formula presumed no income from investment (I) or a gain from any cost plus (U_c) operation. In addition, actual direct expense (A_p) was set equal to expected direct expense (D_p). A further simplification is possible as the Direct Expense (D_p) and Indirect Expense (E_p) allowances in the rates are known. In our example, these were set at $.18\ P_p$. W is also known and was set at .10.

Introducing these simplifications into the formula for X produces the following:

$$X = \frac{R_B}{Lp\,(1.10) + .18P_p - P_p} = \frac{R_B}{1.10\,L_p - .82\,P_p}$$

A further simplification can be accomplished by letting Q equal the loss ratio. The equation becomes

$$X = \frac{R_B}{1.10\, P_p Q - .82\, P_p} = \frac{R_B}{P_p\,(1.10Q - .82)}$$

This simplification is, at this point, essentially that developed by Mr. Stevens and also highlights the sensitivity of the results to the loss ratio and the premium volume as well as the fact that X varies inversely to Q and P_p.