The Actuary

September 1981 – Volume15, No. 7

DEATH BENEFIT INCREASES ON OLD NON-PAR POLICIES

by Andrew C. Muirhead-Gould

Manufacturers Life on January 1, 1981 unilaterally raised the death benefits on our non-participating permanent life policies issued before 1965 in North America. This article describes why and how we did this.

Originally a stock company, we mutualized in 1968; both before and since then we have issued both par and non-par policies. Roughly 30% of our pre-1965 portfolio was some 30,000 non-par whole life and endowment contracts issued with, at the time, markedly low premiums per thousand. Nevertheless, changed conditions have made these policies vulnerable to replacement.

Since profits on these policies are used to support surplus and to increase dividends on our participating policies, it is in the participating policyholders' interest for us to take whatever action will maximize future such profits. One possible way to do this is to offer these non-par policyholders benefits higher than were contracted for at issue.

Actuarial Analysis

To determine how best to protect these policies from replacement, we developed a simplified model of our in-force business, and calculated how these policyholders would fare if the policies were surrendered either for cash or for reduced paid-up, and their cash values and future premiums were applied to new policies. Of course, not all the policyholders would be insurable and many small policies wouldn't be replaced in this way, but this analysis gave a good indication of the size of the problem.

For each cell in the model, prospective asset shares were calculated using the present cash value as the starting asset share. In this manner we constructed a 10-year revenue projection assuming no action taken. We then tested the effects on profit of various possible enhancement patterns and several lapse assumptions, thus arriving at a measure of the financial effect of any enhancement program.

The Action We Took

The percentage death benefit increase that we decided upon varies by policy duration only: 25% or 30% for the oldest policies, grading down to 10% for more recent issues and for policies already converted to reduced paid-up. Total added coverage on the 30,000 policies amounts to roughly $50 millions. Cash and endowment values were not increased.

Although, subject to conditions remaining favourable, we expect these liberalized death benefits to remain in effect, they are not guaranteed beyond one year in the United States, nor beyond five years in Canada. The short guarantee in the U.S.A. is necessary because of nonforfeiture value requirements in that country.

This program has met with no objection from state insurance departments, and has been warmly welcomed by our policyholders and field force. ☐

ASSOCIATE EDITORS

Frederic Seltzer is leaving our Editorial Board, having set a lustrous record of twelve years journalistic service to the Society. Many thanks to Fred for his labors on—let's see now, that's 121 × 8 × 3 columns.

Welcome to Joseph W. S. Yau who becomes Associate Editor after having quickly shown his interest and talents as proofreader and general helper to the cause.

HOW TO HELP US WHEN A MEMBER HAS DIED

by Cynthia M. Keele,
Society Headquarters

It is indeed helpful if we can be notified promptly of a member's death. Far better if two people tell us than if everybody (especially when the person has retired) assumes that somebody else is doing this. The best procedure is this:

1. Do take extreme precautions to keep us from confusing the deceased with another member whose name is similar.
2. The information we need is:
   a) The deceased's date of death, and date of birth if known.
   b) Name and address of next-of-kin, to whom the President will send condolences.
   c) Word on who will write the obituary for the *Transactions* and when we may expect it. ☐

CONGRESSIONAL SEAT APPORTIONMENT

The "Alabama Paradox" was prominent in the responses to our $\sqrt{N(N-1)}$ article (May issue). The apportionment system that had been most recently revised in 1850 became notorious in 1881, we learn, because it ticketed Alabama for a one-seat loss even though the House size was to be increased and Alabama's population had grown since the prior redistribution.

Our appreciation to Messrs. Frank S. Irish, Newton L. Bowers, Charles W. Dunn, James E. Hoskins and Roy A. Saunders for their enlightenment on a mathematical problem that we discover wouldn't be simple even were it free from political gamesmanship. Messrs. Irish and Bowers obliged us with the following references from among many published accounts of a fascinating algebraic problem:

"Congressional Reapportionment," Zechariah Chafee, Jr., *Harvard Law Review*, 1928-29, 1015.

"The Quota Method of Apportionment," M. L. Balinski and H. P. Young, *American Mathematical Monthly, Vol.* 82 (1975), 701.

Mr. Irish was even able to say that our article "brings to mind" the Chafee essay, written more than half-a-century ago!

Mr. Hoskins gently pointed out that the system we described as "Our Method" works just as well if the preliminary step of setting aside the required single seat to each state is omitted, since none is so small as not to qualify for a seat anyway.

Several correspondents went through the math for us. We have now grasped that the square root comes in as consequence of choosing geometric means.

E.J.M.

Al Guertin

(Continued from page 4)

Al loved to talk about his accomplishments. This he had every right to do because they were outstanding, but one of his motivations for doing this, I believe, was to draw out ideas for projects on which he was working. ☐