

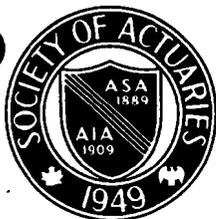


SOCIETY OF ACTUARIES

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A HALF-CENTURY OF MEMBERSHIP

Six who will join the Half-Century of Fellowship Club during 1987 are:

Clemens G. Arlinghaus
John J. Finelli
Lloyd K. Friedman
Muriel Mudie
Henry F. Rood
R. Arthur Saunders

These are the survivors of the 17 who attained Fellowship (in one of the Society's predecessor organizations) in 1937.

Associates who first qualified in that same year are:

Lincoln C. Cocheu
J. Gordon Fletcher
Richard A. Getman
Humbert J. Graziadei
Leon L. Long
Graham C. Thompson

With the addition of these 12, the half-century of membership clubs total 148 — 105 FSAs and 43 ASAs. These populations are slightly below those of a year ago, indicating that 1986 deaths more than offset the new members.

Other characteristics of these veteran, but mostly retired, members of our profession:

1. The median duration of the membership status is 55, but ranging from 50 to 67. Our most senior members, Bill Barber and Jim Hoskins, became Fellows in 1920.

2. The median age attained during 1987 is 82. Thirty were born before the turn of the century, and will be 88 or older. The eldest is Arthur E. Babbit, now 97 — the youngest, the above-noted R.A. Saunders, a Fellow at the tender age of 24, and not yet 74 today.

3. No less than 1/3 of the 105 Fellows became so in or before the calendar year

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BOOK REVIEW

Demography Through Problems, by Nathan Keyfitz and John A. Beekman. 1984. 136 pages (Springer-Verlag).

Reviewed by Robert L. Brown

Readers should have no need for a lengthy review of the depth of knowledge these two distinguished authors have in the field of Demography. In total, they possess over a century of writing, research, and teaching experience in this field.

The topics covered in this book include: Populations that are not Age-Dependent; The Life Table (much of which is a review to someone having studied Life Contingencies); Use of Stable Theory; Births and Deaths under Stability; Projection and Forecasting; Stochastic Population Models.

In the preface the authors point out that "The book... is an experiment in the teaching of population theory and analysis". Of the 136 pages, only 18 are given over to narrative. The rest of the text consists of a "sequence of problems (338) where each is a self-contained puzzle, and the successful solution of each puts the students in a position to tackle the next, as a means of securing the active participation of the learner and so the mastery of a technical subject".

Whether the book is completely successful in this regard may be open to debate. We have used the text at the University of Waterloo for the last two years and have been totally delighted with it. It is brief but clear and almost without error (I have found only one!).

However, a text that is suitable in a lecture/tutor environment does not necessarily translate perfectly into the correspondence mode of the Society.

And more's the pity. Since the totally

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RECENT SOCIAL SECURITY AND MEDICARE ENACTMENTS

By Robert J. Myers

The massive Tax Reform Act of 1986 and the Omnibus Budget Reconciliation Act (both enacted into law in October) contain a number of significant changes in the OASDI and Medicare programs. Also, in the legislative process a number of significant matters were passed by one body of Congress, but were not agreed to in conference; such matters are sometimes indicative of action which may occur in the future.

The principal effect of the Tax Reform Act on the OASDI program was an indirect one. The lower income tax rates reduce the transfer (of income taxes received on part of SS benefits) to the OASDI funds. The result will be slightly decreased income to these funds, representing 0.07% of taxable payroll on a level-cost basis.

The Tax Reform Act also contains provisions with regard to the coverage of ministers and members of religious orders. Such persons who had previously opted out on grounds of religious principles or conscience are permitted to withdraw their election and be covered in the future. The requirements for newly ordained pastors opting out were tightened.

The Budget Reconciliation legislation contains a number of changes. The major OASDI change was the permanent elimination of the "3% trigger" for providing the cost-of-living adjustments each December, resulting in a 1.3% COLA first payable in early January 1987. Elimination of the trigger requirement also affects the maximum taxable earnings base and the exempt amounts in the retirement test, which increase only when a COLA is granted.

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Letters

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Actuaries in 1976 to realize that they outnumbered the entire membership of the American Society of Actuaries in 1939, at which time I first began to study for the actuarial examinations.

Until now I have restrained myself from making any comment or observation. The September issue printed an article on Mortality Experience Among Actuaries by Mohamed F. Amer. The November issue included a letter on Age at Fellowship by Charles N. Walker. I have worked with each of these individuals, and I know that each possesses the expertise to recognize the flaws inherent in their analyses. At the same time, I must admit that each was working with limited data, and it is often the function of the actuary to proceed with available data, however limited, in order to arrive at the most logical conclusion based on such data.

Mohamed has done a fine piece of work to produce an abridged life table based on the scant data which appeared in the February 1986 issue. That data reported numbers of new Fellows year by year from 1920 to 1936 inclusive. It also included the number of survivors to 1949 and to 1986. One fact which Mohamed probably did not know is that nine of the terminations, representing the difference between the number of new Fellows and the survivors to 1986, resulted from resignation, rather than death. But my more serious complaint is that he used a single life table as a standard of comparison to cover an exposure period of more than 65 years.

I will grant that the 1958 CSO table was based on experience that was nearly central to the period of exposure we are dealing with. To use such a table on a stationary population when no convenient alternative is available can be excused as an expediency. When the exposure consists of a closed group that is aging over a period of 50 years, it fails to take into account the nature of the progression of mortality rates over those 50 years. The small overstatement in the mortality rates for the young ages during the 1920's, 1930's, and 1940's does not begin to compensate for the substantial overstatement in the mortality rates for the older ages in the later years.

The importance of this can readily be seen by looking at three of our important mortality standards: the 1941 CSO, the 1958 CSO, and the 1980 CSO. The difference is apparent by comparing the sums of the values of q for ages 25 through 49 and for ages 50 through 74. Although the individual sums differ substantially, when given equal weight the differences are minimized. For the case in point, where the older ages are more heavily weighted toward the more recent table, the inequality becomes a serious concern. The sums themselves for the 1941 table are .14637 and .91941; for the 1958 table they are .08857 and .73681; and for the 1980 table (using male lives) they are .07466 and .59439. The impact of this change on a closed block of business is quite striking.

As an observation, I have found it to be a mistake that is not uncommon, even among expert students of mortality, to derive a composite mortality ratio by weighting the individual ratios by the volume of exposures. The accurate way, however, is to weight the individual ratios by the volume of deaths. More than 50% of the deaths in the group under consideration here occurred in 1969 or later.

Mohamed also presumed that the average age for attaining Fellowship was no less than 30. Chuck Walker explored this by the only means conveniently available to him. He referred to the obituary notices in the *Transactions* to get dates of birth, and hence average age at Fellowship. He reported the results of an analysis of a sample of 97 cases. He does not indicate the method of selection of the sample, nor does he comment on the validity of Mohamed's presumption. The sample size was quite adequate if it was randomly selected. If the sample was biased towards recent deaths, it would include an inherent bias toward a younger age at attainment of Fellowship. What is lacking is the consideration of the dates of birth of the 100 or more survivors, and what would be the effect of including these individuals when calculating the overall average age of Fellowship.

When age is measured as the age nearest birthday, it so happens that the average age at Fellowship of the deceased members of our group is fractionally over 31. For the survivors, however, the average age is more than three and one-half years younger — less

than 27.5. For the aggregate group, including the nine who withdrew, the average age is fractionally less than 30 — in fact, 29.85.

These numerical observations of mine are limited to those who became Fellows in the years 1920 to 1936 inclusive. They are based on dates of birth for this group and they reflect the imposed delay until attainment of age 25 on a rather substantial number of our younger students. This restriction was apparently overlooked in the case of at least nine of the group in question, seven of whom are still living and I will not mention their names. They themselves know who they are.

At least eleven of our past presidents completed their examination requirements prior to age 25, including William Anderson, as was reported by Chuck Walker. Actually, five of our past presidents were admitted to Fellowship between 1920 and 1936 at age 25 following a delay after successful completion of the examination requirements. It is also true that at least three of our past presidents were inadvertently admitted as Fellows before age 25. One of those was the late John S. Thompson Sr., and another was Dennis Wartens, also deceased. The third is still living and I will not mention his name.

John H. Cook

Book Review

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justified removal of "Introduction to Demography" by Spiegelman, there has been virtually no truly Demographic material on the Associateship syllabus and little in total. Demography is important enough to all actuaries (and vital to many) that it at least warrants elective status in the new flexible syllabus.

This book was plainly written specifically for that reason. It obviously satisfies the page-count paranoia of the Society, but only by introducing some pedagogical weaknesses. Without at least an accompanying study note, this text may prove difficult for the correspondent student.

However, for those with special interest in Demography, I highly recommend this carefully presented text and sincerely hope that it will someday find its place on the Society's syllabus. □