



SOCIETY OF ACTUARIES

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MORTALITY FLUCTUATION RESERVE AND GAAP ACCOUNTING (Continued)

Editor's Note: The Occidental Life Insurance Company of California also prepared a position paper on Mortality Fluctuation Reserves for Stock Life Insurance Companies and we are indebted to the Company for permission to reproduce the paper.

In anticipation of the issuance of an audit guide for life insurance companies, the Occidental changed the accounting methods to what we considered to be generally accepted accounting principles for the year ended December 31, 1970. We believe the methods we chose at that time conform to the Audit Guide for Stock Life Insurance Companies issued by the AICPA in December, 1972.

While we were not thinking precisely in terms of "provisions for adverse deviations" as referred to in the Guide, we did, and do, believe that the assumptions and methods used in adjusting statutory statements to GAAP should contain enough conservatism to be in keeping with the long-term nature of the contracts. Consequently, we adopted amortization periods of twenty (for term policies) and thirty (for permanent policies) years for acquisition costs instead of the premium paying period to provide for adverse variances in withdrawal assumptions, graded interest rates to non-inflationary rates over the same periods and set up a mortality fluctuation reserve.

We first considered the use of simply a more conservative mortality table (such as the 1958 CSO generally used for current issues under statutory accounting). Assuming that the mortality actually assumed was realistic, this would have allowed some portion of our profits to flow into earnings as we were released from the risk involved. We did not adopt this approach for two basic reasons:

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ACTUARIAL APTITUDE TEST

The Committee to Encourage Interest in Actuarial Careers announced this summer that the Actuarial Aptitude Test (AAT) has been revised. The new test was prepared by Educational Testing Service of Princeton, New Jersey as was the original AAT.

The AAT was introduced in 1962 and has been taken by more than 15,000 persons. It has proved to be a valuable aid in counselling students and other persons interested in an actuarial career.

The original AAT consisted of two parts, a mathematics section and a verbal section. In 1966, a detailed comparison was made of scores on the mathematics section of the AAT with grades received on the General Mathematics Examination (Part 1) for the nearly 2,000 students who had taken both tests by that time. A similar sample study was made in 1973. Both studies indicated a strong correlation between AAT mathematics scores and success on Part 1, suggesting the use of the AAT mathematics score as a predictor of the probability of success with Part 1. While no comparable correlation has been established for the verbal section of the AAT, this test is believed to be a useful indicator of the individual's facility with the English language, and therefore it too can be a valuable aid in counselling persons considering an actuarial career.

Like the original, the new AAT consists of a mathematics section and a verbal section. The new mathematics test differs only slightly from the original, representing minor updating of certain of the problems. The new verbal test, however is considerably different from the original. Specific word usages have been up-dated and improved and the structure of the test itself has been modernized.

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CLOSING THE GAAPs?

GAAP Assumptions—"Procedures for Adjusting Life Insurance Company Statutory Financial Statements to GAAP Basis," Life Office Management Association, Sept. 1974.

by Robert L. Lindsay

This Special Release of the Financial Planning and Control Division of the LOMA is a well-organized summary of the responses of 96 U.S. stock life insurance companies that adjust statutory statements to a GAAP basis. Results are presented in Section A for all 96 companies, in Section B for 36 companies with less than \$25 million of premium income, and in Section C for the remaining 60 companies.

The information gathered is quite extensive and the prospective reader may obtain some idea of the scope of the study from a partial list of the topics covered:

- I. Procedure for Deferring Acquisition Costs
 - A. Approach to amortization (e.g., accountant's worksheet, factors)
 - B. Lines of business where expenses amortized
 - C. Costs being deferred (e.g., commissions, managerial compensation, training allowances, sales conventions)
 - D. Amortization method (e.g., sum of premiums with or without interest discount)
 - E. Amortization period (by line of business)
 - F. Starting year for deferring acquisition costs
- II. Revaluation of Reserves
 - A. Lines of business revalued
 - B. Interest assumptions for current issues
 - C. Mortality or morbidity tables for current issues

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Estimated Future Needs	Total	Fellows	Associates	Students
(a) 1/1/1973	4,021	1,662	1,107	1,252
(b) 1/1/1978	5,671	2,299	1,598	1,774
(c) 1/1/1983	6,582	2,635	1,866	2,081
(d) 1/1/1988	7,379	2,944	2,083	2,352
(e) 1/1/1993	8,171	3,217	2,315	2,639

Manpower increases needed as actually reported "Per Table 1" are shown in Table 2. On the assumption that the needs for actuarial manpower for non-reporting employers are related to the number of members of the Society in the same ratio as for those sending in data, a second column suggesting total actuarial manpower needs for Fellows, Associates and Students separately is shown.

Table 2
Manpower Increases Needed

	Fellows		Associates		Students	
	Per Table 1	$\times 1.37$ (a)	Per Table 1	$\times 1.85$ (b)	Per Table 1	$\times 1.56$ (c)
At 1/1/73	171	234	154	285	154	240
1973 to 1978	637	873	491	908	522	814
1978 to 1983	336	460	268	496	307	479
1983 to 1988	309	423	217	401	271	423
1988 to 1993	273	374	232	429	287	448

- (a) Factor to raise coverage of 73% of Fellows to 100%
($1 \div .73 = 1.37$).
- (b) Factor to raise coverage of 54% of Associates to 100%
($1 \div .54 = 1.85$).
- (c) Factor based on coverage of 64% of employed members of Society of Actuaries
($1 \div .64 = 1.56$) to proportionately reach 100%

The additional manpower required for all categories then totals 759 as of 1/1/73 and for succeeding five year periods, 2595 (1973-1978), 1435 (1978-1983), 1247 (1988-1993). Of course, these figures reflect only the growth of present employers of actuaries, and in a substantial number of instances, the projected growth rate of zero has been used after five years into the future due to the many unknowns involved in such projections.

The projected growth of actuarial manpower for non-reporting employers may not match that of those who submitted data. In addition, although the growth of newer smaller firms may tend to be more rapid than that of larger, better established companies, there may also be an excess of optimism reflected in the projections reported by the newer firms.

A look at the history of manpower growth as shown in Table 1 shows that the increases between 1/1/68 and 1/1/73 in the total employed was 1,038. It appears that around 1,449 (745 + 1,237 - 533) new students supported this growth. This indicates that new students needed are about 140% of the desired growth in actuarial manpower.

On this basis, the total need for new actuarial students up until 1/1/78, including present and projected needs, is around 4,700 [(759 + 2595) \times 1.4 = 4696]. This is 940 new entrants per year and is more than twice the average experienced during the five years, 1968-1972 [(1449 \times 1.56) \div 5 = 452]. Even assuming a significant overstatement of demand, it seems apparent that there will be a substantial continuing need for new actuarial students.

Information was also requested regarding areas of work for employed actuaries. Distribution in broad categories as of 1/1/73 is shown in Table 3. The corresponding figures for 1/1/78 differed very little from the Table 3 figures. More information about type of employment is also available in the Year Book.

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Sociological Note

A newspaper report of the recent promotion of a member of the Society stated that he had been "Vice President-Date Processing." This provoked the comment from one of his friends that he hoped the Vice President was able to insure satisfaction while another friend suggested that Date Processing was being used to produce studies of male and female morality. The victim, however, was equal to the occasion and replied to the comments as follows:

"Sorry I did not see the newspaper article ascribing Date Processing to me. Most of this work has been done ineffectively at home where my children would not entirely agree that I have insured satisfaction.

"My studies of male and female morality have convinced me that many claims are invalid, the probabilities of significant events are not mutually exclusive, and non-smokers have gone to pot which has been statistically significant. Further, there has been a GAAP in our accounting for children, probably derived from the former problem of no accounting for women, which has now been eliminated by the EEOC.

"I can only conjecture that promotion to a senior role in the field of vice was a result of this activity."

Actuarial Aptitude Test

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Earlier this year, Educational Testing Service gave both the new test and the original to groups of students at 14 colleges and universities. The results showed that, as might be expected, the mathematics sections in the two tests are practically equivalent. The major changes in the verbal test make comparison with the original section difficult but ETS and the Committee are satisfied that it is a fair and reasonable test of the student's facility with the English language.

The Committee believes that the new AAT is an improvement over the original and that, the AAT will continue to serve a valuable function in counselling persons considering an actuarial career.

Further information about the revised AAT may be obtained from the Society's Executive Director, Gary See, or from members of the Committee to Encourage Interest in Actuarial Careers.