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## THE 1983 TABLE *a*

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*Ed. Note: This is the first of three articles about the new Table a that is scheduled for adoption by the NAIC in June 1982.*

The Society's Committee to Recommend a New Mortality Basis for Individual Annuity Valuation, formed in 1980 at NAIC request, began by examining an advance copy of the 1971-76 individual annuity and settlement option experience, and concluded (i) that the margins in the 1971 IAM Table (*TSA XXIII*, 496) had eroded, making that table unsuitable for the 1980's; (ii) that because of the pattern of mortality decline by age, an age set-back wouldn't do; and (iii) the new valuation laws permitting higher rates of interest would remove interest rate margins that might otherwise offset inadequate mortality margins.

### The 1973 Experience Table

The first step was to construct an experience table, using the best and most recent data. The Committee determined that it, like the 1963 Experience Table (*ibid.*, 490), should be based on the total of immediate annuities, settlement options and matured deferred annuities (but excluding pension trust business), and should reflect all years of issue; we felt that a valuation table should be designed to be adequate in the aggregate for a typical mix of business such as the 1971-76 study appears to contain. And we decided to construct separate tables for men and women, no one male/female ratio being appropriate for every company.

Crude 1973 mortality rates were derived from the Intercompany 1971-76 Study by applying ratios of actual to expected deaths by five-age groups to the 1971 IAM  $q_x$  at the central ages. In

## FOR YOUR READING

William R. Waters: *Employer Pension Plan Membership and Household Wealth*, pp. 110.

From a sample of Canadian households, Prof. Waters has gathered data on the tendency for pension plan participants to reduce other forms of saving. He concludes that they do so to the tune of between 50% and 100% of the household's pension contributions. This is Monograph 10 (1981) of the S. S. Huebner Foundation for Insurance Education. Available from Richard D. Irwin Inc., 1818 Ridge Road, Homewood, IL 60430. \$US 14.95.

Robert J. Myers: *Indexation of Benefit Computations In National Pension Scheme of United States of America*, pp. 14 in typescript.

This was a contribution to the proceedings of the VIIth (1979) International Conference of Social Security Actuaries and Statisticians, Mexico, an event sponsored by the International Social Security Association, Geneva. Deals historically with the ill-fated automatic-adjustment provisions of our 1972 Amendments, the subsequent wage-indexing vs. price-indexing debate, and the indexing procedure in the 1977 Amendments. Mr. Myers kindly volunteers a gratis copy to readers who request it to him at 9610 Wire Ave., Silver Spring, MD 20901.

Social Security Administration: *Actuarial Notes Nos. 102-110.*

Our space difficulties have made this newsletter remiss about telling our readers about Actuarial Notes available gratis from Office of the Actuary, Social Security Administration, Altmeyer Bldg., Room 707, Baltimore, MD 21235. Titles are:

No. 102. A Comparison of Social Security Taxes and Federal Income Taxes.

No. 103. Average Wages for Indexing and the Automatic Determinations for 1979-81.

No. 104. A Comparison of Retirement Benefits Under the U.S. and Canadian Systems.

No. 105. Equivalent Retirement Ages: 1940-2050.

No. 106. Comparison of Actual Economic Experience and Assumptions in Trustees Reports 1971-1980.

No. 107. Were Benefits Under the Original Program on an Individual-Equity Basis?

No. 108. Long-Range Projection of Average Benefits Under OASDI.

No. 109. Economic Forecasting: Effect of Errors on OASDI Fund Ratios.

No. 110. Costs of The System Over The Years Compared With Those Estimated in 1935.

Also published has been Actuarial Study No. 86, *Effects of the Various Social Security Benefit Computation Procedures.*

Our apologies to the fine SSA actuarial staff for the delay in reporting these essays and for this summary treatment of them. □

the absence of useable mortality experience at ages below 48, the 10 percent loading was removed from the 1971 IAM rates and the resulting  $q$ 's were connected to those at higher ages by use of a cubic. Finally, the rates were graduated by a Jenkins 5th difference osculatory formula.

### Closeness of Fit

The table below, showing how well the 1973 Experience Table fits the underlying data at selected groups and all ages combined, also serves as a warning that it—and hence also the 1983 Table *a*—is not representative of the experience under different kinds of annuities.

**Ratios of Actual Deaths to Those Expected on the 1973 Experience Table**

Selected Ages	Immediate Nonrefund		Immediate Refund		Matured Deferred		Settlement Option		All	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
65-69	150%	106	97	114	97	92	97	103	99	104
70-79	115	94	94	96	97	102	104	102	101	100
80-89	82	87	92	97	106	107	109	101	100	99
90 & over	91	92	98	105	109	104	104	99	99	100
All ages	96	90	95	100	102	105	105	103	101	101