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Correspondence should be addressed:
The Actuary
Bermuda Run,
Advance, N.C. 27006—0780
Tel: (919) 998-5335

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EDITORIAL

ANNUITANT MORTALITY OVER SIXTY YEARS

The figures in this message may be accepted by interested readers as evidence that your editor (i) is inspired by the recent work of Robert J. Johansen and his Committee, (ii) is intrigued by discovering that benchmarks happen to be available for annuitant mortality in the evenly spaced years 1923, 1943, 1963 and 1983, and (iii) is reckless of the pitfalls in directly comparing the mortality rates in four such widely separated actuarial explorations into this complex territory.

The actuaries in whose papers these figures have been revealed to our profession are:

Robert Henderson (1871-1942): U.S. Annuitants 1918-27, *T.A.S.A.* XXX (1929), 246.

Wilmer A. Jenkins (1901-1976) and *Edward A. Lew*: 1943 Experience Table, *T.S.A.* I (1949), 462-3.

Harold Cherry: 1963 Experience Table, *T.S.A.* XXIII (1971), 490.

Robert J. Johansen: 1983 Basic Table, *T.S.A.* XXXIII (1981), being printed.

The first of these papers was presented at a time when actuaries were becoming painfully aware of the existence of large numbers of immediate and deferred annuities and life income settlement options issued at seriously inadequate rates; the subsequent three depict instalments in the (thus far) successful actuarial campaigns to avoid any more debacles of that kind. The figures here speak eloquently of the necesity for unremitting vigilance.

	Age 60	*Age* 65	*Age* 75	*Age* 85
		1000 q_x — WOMEN		
1923	11.2	18.5	64.1	131.5
1943	9.2	14.9	41.3	114.5
1963	8.4	11.7	31.8	103.0
1983	4.9	8.2	22.4	72.4
1943/1923	.82	.81	.64	.87
1963/1943	.91	.79	.77	.90
1983/1963	.58	.70	.70	.70
1983/1923	.44	.44	.35	.55
		1000 q_x — MEN		
1923	18.6	31.8	73.9	146.2
1943	19.0	27.0	60.2	143.3
1963	15.2	22.0	51.2	122.4
1983	9.3	14.2	39.0	101.3
1943/1923	1.02	.85	.81	.98
1963/1943	.80	.81	.85	.85
1983/1963	.61	.65	.76	.83
1983/1923	.50	.45	.53	.69

E.J.M.

LETTERS

Cost Of A Pension Plan

Sir:

Gerald Richmond (Nov. 1982 issue) undertakes to clear up confusions about the meaning of "cost" as it relates to pension plans. While I fully agree that considerable confusion exists and that its removal is greatly to be desired, I am far from convinced that his proposals contribute to this; confusion may indeed be inevitable because of the very nature of the "cost" of a pension plan.

My doubts focus upon Mr. Richmond's rearrangement of the familiar equation of pension plan cost elements, to wit: C + I = B + E, where C stands for the contributions (from employer and employees), I is investment income, B is plan benefits and E is plan expenses. Mr. Richmond believes that, if we isolate C, which by definition is equivalent to B + E − I, we are getting close to the "actual cost" over the plan's lifetime, and that the annual cost calculations determine an approximation to the current-year value of C which eventually converges to the desired true value.

The difficulty with this is that the values of C and I are strongly affected by the timing of the plan contributions. If the funding program is such that large contributions are made early in the plan's life, the value of I will necessarily be greater than if they were made later; accordingly the sum of the annual elements of I will be greater, and the corresponding sum for C will be less. This is of little significance if C and I are on the same side of the equation but when I is treated as a subtractive element from B and E, then C, the apparent cost to the employer, is highly affected by incidence.

It cannot, I think, be maintained that this is of little importance because of the effects of discounting and the time value of money; the vagaries of the investment rate of return will certainly have a bearing upon the value of I, hence of C.

Another way to view this problem is to recognize that B and E are subject to variations in both incidence and amount. Incidence is basically determined by the plan's underlying experience, but amount reflects both the plan provisions and the impact of inflation. To a greater or lesser

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