

- (4) Whether or not immediate annuities (after the first year or two) result in mortality rates materially different from those occurring under matured deferred annuities, I have no way of demonstrating because no separation is made in the schedules. In the experience of United States life insurance companies, the difference has not been material. If that were also true of government annuities, the figures in Tables 1 and 2, combining both kinds of annuities, would be satisfactory for each kind of annuity.
- (5) Among males the mortality experienced under group annuities was radically different from that under individual annuities. This raises a rather important question which will be discussed in a later section.

*Conclusions Which Can Be Drawn From Tables 1 and 2*

The most important conclusion which can be drawn from Tables 1 and 2 is that among both males and females more deaths occurred during the years 1943-8 than contemplated by the present basis of premium rates, the excess being 13 per cent for males and 18 per cent for females, plus a few per cent because of factor (1) mentioned above. These excess percentages may be considered as the margins for possible future improvements of mortality after the years 1943-8.

It is also important that these excess death rates were not uniform at all ages; for females especially the excess was much larger at advanced ages and much less at younger ages. In fact, among females there was probably no margin at all at ages 60-69 taken together, even adjusting the experience to the select table for immediate annuities. And for males under age 60, the margin was quite small.

The important question of how long these excess death rates might continue in the future will be discussed later. At this point I will merely emphasize that the British Offices tables set back 3 years of age have been much less adequate at younger ages than at advanced ages, especially for females, and that a lack of equity is thereby indicated. This conclusion is strengthened by the fact that much the same situation exists and approximately the same conclusion is being reached with respect to annuities in other countries. The very large individual annuity experience among United States life insurance companies now shows that the mortality table in use (the Standard Annuity table) is somewhat deficient at younger ages and somewhat redundant at advanced ages, and that a new table, with a steeper gradient by age, is needed. This situation may be attributed to the relative mortality trends at the several ages, which are somewhat international in character.

In this connection Charts A, B, C, and D may be informative. The first two of these charts compare the 1943-8 government annuity death rates, covered by Tables 1 and 2, with the British Offices (Ultimate) tables, set back 3 years of age, and also with the same tables set back 1 year of age (the basis of government annuities prior to 1948). These two charts show that the 1-year set back was insufficient at most ages, that the 3-year set back produced an over-all safety margin which, however, was much smaller at the younger than at the advanced ages.

Charts C and D compare the government annuity death rates, covered in Tables 1 and 2, with those recently experienced under individual annuities by United States life insurance companies. The similarity of the two experiences is, in my opinion, striking.