

Fund either for the whole Service or for certain Departments or for officers joining on or after any given date. Table VA of the Appendix gives particulars of membership, &c., arranged according to the various Departments of State.

THE VALUATION.

13. The main object of an actuarial valuation is to ascertain whether the current funds, together with the present value of the future contributions, will be sufficient to meet the total liabilities. Before the valuation can be carried out it is necessary to make a careful estimate of the various factors on which the payment of the benefits and contributions is dependent. These factors may be briefly summarized as follows:—

- (a) Rate of interest;
- (b) Mortality-rates of pensioners;
- (c) Average salary scales;
- (d) Mortality-rates of contributors;
- (e) Voluntary-withdrawal rates of contributors;
- (f) Retirement-rates of contributors;
- (g) Marriage-rates of contributors;
- (h) Probability of a member leaving children under fourteen years of age, and the average number of such children;
- (i) Remarriage-rates of members' widows.

14. The rate of interest used in valuing benefits and contributions was $4\frac{1}{2}$ per cent., as the Fund is State-guaranteed.

15. The mortality-rates adopted for pensioners were those used in the previous valuation, and were based on an investigation of the combined experience of the three Government Superannuation Funds (Public Service, Railways, and Teachers) for the period 1919–1927.

16. Average salary scales in respect of males and females separately had to be constructed for the year immediately following the valuation date. This presented considerable difficulty, as it was complicated by the salary cuts and the fact that there were two classes of officers, one contributing on hypothetical salaries—*i.e.*, pre-cut salaries as far back in some cases as 1921—and the other on actual salaries. To have constructed average salary scales based on the heterogeneous contributory salaries, and applied the resulting ratios of increase from age to age to the contributory salary of each contributor as at the 1st April, 1934, would have considerably overestimated the pension liabilities, as, under normal circumstances, the average officer contributing on actual salary would not rise to the hypothetical salary scales, and pensions are based on final salaries. Even if actual salaries were used to obtain the ratios of increase from age to age, the prospective salaries would have been divorced from realities in view of the fact that a large number of officers would never by normal promotions bridge the gap between their actual salaries and the hypothetical salaries on which they were contributing. The problem would have been simplified had the options to pay on higher salary been exercised, as one would have expected, only by the older officers, or by those who had been at the top of the grade so long that they took a very conservative estimate of the possibilities of future promotion. In actual fact, out of the total of 17,369 contributors, no less than 3,239 elected to pay on the pre-cut salaries, and this included contributors from age twenty-four upwards, many of whom must, except under very exceptional circumstances, have recovered the amount of the salary “cuts” by promotion during the remainder of service. The tacit assumption made by each officer electing to contribute on his salary prior to the cuts was that his actual salary would not rise to the higher figure prior to retirement (normal or medically unfit), but even a brief glance at the two sets of salaries showed that at the younger ages the disparity between actual and hypothetical salaries was not wide enough to justify the assumption of valuing on the basis that future salary increases would not bridge the gap. It therefore became necessary not only to separate those contributing on actual and on hypothetical salaries, but also to make two valuations of those contributing on hypothetical salary to make the necessary allowance for the fact that males under age forty-seven and females under age forty-four would, on the average, rise to a higher actual salary than the hypothetical salary on which they were contributing. In making these several valuations, it was essential to make some assumption as to an early restoration of portion of the remainder of the salary “cuts,” and for this purpose I assumed that an immediate all-round increase of 5 per cent. would be forthcoming as at 1st April, 1935. Actually a $7\frac{1}{2}$ -per-cent. increase was subsequently granted in August, 1935, and all salary cuts were fully restored as from 1st July, 1936.

17. The actual deaths among male members during the quadrennium were 225, as against 251 expected by the tables used in the previous valuation, and this lighter mortality was in evidence for all age-groups.

18. The male withdrawals were 859, as against 1,530 expected. This appears to have been directly due to the economic depression, the difficulty of finding remunerative employment checking the former tendency of officers to leave the Service for private employment.

19. The number of male officers retiring was 790, as against 506 expected, and the excess was reflected in all age-groups from thirty-five onwards. In the last three actuarial reports stress has been laid on the serious financial consequences to the Fund of retiring, irrespective