

have been most common among the largest employers of labor. Furthermore, the same factor explains to some extent the fact that insurance companies, which offer preferred rates in the case of group annuity insurance, are generally unwilling to issue a group annuity contract covering less than 50 lives, even though the risks would be small in comparison with the total number of lives insured by these companies. Even large employers of labor, if they create retirement plans, usually seek to obtain some form of insurance or reinsurance in order to provide financial soundness by a pooling of the risks.

An indication that the use of a small unit for retirement purposes has some relation to the lack of financial stability may be gathered from the pension funds for police and firemen. Many of these plans are under-financed, due to a combination of circumstances. In addition, the number of contributors to the individual plans is so small that great uncertainty exists as to the contingent liabilities of the several funds. In a fund covering a large number of employees much greater certainty in estimating liabilities can be obtained, due to the fact that mortality tables, like any averages, can be validly applied only to a substantially large group.

#### **Joint-Contributory Plans**

Under the contributory systems the cost of pensions is shared in some proportion by the employees and by the governmental unit concerned. Most frequently the employees pay a fixed amount according to length of service and salary, and the employer makes up the balance necessary to provide pensions. The distinguishing feature of this plan is that there is recognized a joint responsibility on the part of the employer and the employee to provide security against the hazards of superannuation and disability.

The specific advantages claimed for

the contributory plan are that: (1) it is easier to establish and maintain because the financial burden is divided, (2) it may check extravagant demands on the part of the employees, since it is clear that a part of the cost will be borne by them, and (3) it is in accord with the theory that, since the faculties of the employee are being used both in the service of the governmental unit and in his personal pursuits, a joint responsibility rests upon the governmental service and upon the employee to provide economic security for the employee in his old age.

The disadvantage claimed for the contributory system are: (1) that it establishes claims on the part of the employee that otherwise would not be the responsibility of the government, such as claims for benefits in the event of death or voluntary resignation, (2) that it is contrary to the interests of the employees because their salaries are already so low that they can not stand deductions, and (3) that it necessitates the introduction of cumbersome and elaborate machinery to administer the plan.

#### **Financial Stability**

The development of an actuarially sound retirement plan may be viewed as a problem in working out the "premiums" to be paid by the employer or employee. Such "premiums" should be graded according to some basic factor, such as the annual salary earned, so that the cumulative payments by the employee and by the governmental unit in his behalf will, subject to various contingencies and the compounding of interest, provide an amount adequate, when the employee reaches the retirement age, to pay the benefits promised.

Actuarial computations of the liability of a pension fund include two two major items: (a) the reserve neces-

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