Types of Formal Pension Plans

3

THE preceding chapter outlined the features which are common to all types of pension plans, with particular emphasis on the benefit structure. This chapter will describe the basic characteristics of the legal arrangements under which the benefits of a pension plan may be provided. These forms can be broadly classified as (1) insured and (2) self-administered. Some pension plans are partially insured and partially self-administered, the over-all program being designated as a combination plan. Only the substantive features of the plans will be described in this chapter.

INSURED PLANS

INDIVIDUAL CONTRACT PLAN

The benefits promised under a pension plan may be provided in the form of an individual annuity or insurance contract issued on the life of each employee eligible to participate in the plan. This method is generally referred to as an individual contract pension trust or even as a pension trust, since it operates through a trustee, either an individual or corporation, who holds title to and possession of the individual contracts issued under the plan. The trust arrangement is used in order to qualify the plan under Treasury regulations and for administrative reasons. The provisions of the pension plan are usually incorporated in the trust agreement, the trustee being charged with the responsibility of administering the plan.

The trustee makes application for the insurance or annuity contracts on the lives of the eligible employees and upon issue holds the policies subject to the terms of the pension trust agreement. If insurance is involved, evidence of insurability satisfactory to the insurance company will be required. In some companies, a medical examination will be required for each new employee as he enters the plan and for each employee who receives an increase in his benefits under the plan. Companies which write nonmedical insurance may issue the policies on the basis of the individual's statement of past medical history and present condition of health. The plan may be contributory or noncontributory, but in either case the employer turns over to the trustee sufficient sums of money to pay the premiums on the insurance or annuity contracts, and the trustee transmits the money to the insurance company. Upon certification by the trustee, benefits are normally paid directly to the employees by the insurance company, but under a few plans the latter makes payment to the trustee for transmittal to the employees.

Nature of the Contracts.—Several types of contracts may be used under the individual contract plan, the choice depending upon the benefit provisions of the pension plan. The contracts used most extensively, however, are the retirement annuity and the retirement income policy, the latter sometimes being referred to as a retirement endowment or endowment annuity policy.

The retirement annuity contract embodies the two concepts of accumulation and liquidation. Prior to retirement, the contract is nothing more than a method of accumulating a principal sum by the use of the investment facilities of an insurance company; the annuity or liquidation feature does not go into operation until the employee retires. This dual nature of the contract can best be explained by an illustration.

In accordance with the rate basis of several leading companies, $1,623 would have to be on hand at age 65 for each $10 unit of monthly life income to be paid to a male employee, with payments guaranteed for ten years.[1] If a particular employee should be entitled to a retirement benefit of $100 a month at 65, with 120 guaranteed instalments, any insurance company using the rates cited would have to have $16,230 on hand when the employee reached 65. Theoretically, it would be immaterial to the insurance company whether the $16,230 was paid to it in a lump sum at the time of the employee's retirement or was accumulated over a period of years by periodic

[1] The maturity value of a retirement annuity providing a life income of $10 per month to a male age 65, with payments guaranteed for 10 years, ranges from $1,582 to $1,706 among the leading life insurance companies.

payments. If, however, a retirement annuity should be purchased for the employee at age 45, an annual deposit of $709.70 with the insurance company would accumulate to the required sum of $16,230 at 65.[2] At that time, the employee would begin to liquidate the principal sum at the rate of $100 per month if he elects the normal annuity, or at a slower rate if he chooses an annuity with a larger death benefit.

The deposits, or level premiums, as they are called, are credited with a guaranteed rate of interest, and should the employee die at any time before 65, a death benefit equal to the premiums paid on the contract or the cash value, whichever is larger, is available.[3] Whether such sum would be paid to the deceased's beneficiaries or credited against future employer contributions would depend upon the vesting provisions of the pension plan. If the plan were contributory, the employee's estate would be entitled, as a minimum, to the benefits purchased with his contributions. The cash value would also provide any withdrawal benefits that the plan might authorize. It can be seen, then, that during the period of accumulation the employer has a number of pure investment accounts, represented by the individual retirement annuities on the lives of the active employees. After retirement, the benefits are distributed on the basis of the same annuity forms that are available under any other pension plan.

Retirement annuities are generally issued only in units of $10 monthly income at retirement, although a few companies will provide additional units on a $5 basis. This means that the benefit formula of the pension plan must be set up in such manner as to produce retirement benefits only in units of $5 or $10, as the case may be. Wage increases can be recognized only if, alone or in conjunction with prior increases, they are of such magnitude as to entitle the employee to an additional unit of $5 or $10 of monthly retirement income. Adjustment of retirement credits because of decreases in compensation is subject to the same limitation.

The contract is issued originally in that multiple of $10 monthly

[2] The annual deposit of $709.70 includes a charge for expenses and varies among the companies whose policies have the same maturity value.

[3] The cash value under a retirement annuity is the equivalent of the premiums paid, plus interest, less a charge for expenses. After a few years, the cash value will exceed the accumulated value of premiums paid, without interest.

income which is equivalent to the benefit that would be payable to the employee if he should continue to work at his current salary until normal retirement age. If a subsequent increase in compensation should entitle the employee to one or more additional units of retirement income, an additional policy in the appropriate amount is purchased for the employee. Each such increase is assumed to remain in effect until normal retirement age. Over a period of years, the trustee may purchase half a dozen or more policies for a single employee, each one, after the original, representing an additional increment to the employee's retirement income. A wage decrease is likewise assumed to be permanent and, if large enough, will cause the cancellation of one or more units of retirement income, the cash values being applied to the purchase of paid-up insurance and appropriate adjustments being made in future premium payments.

The retirement income policy is identical with the retirement annuity contract except that the former incorporates an insurance feature.[4] Whereas the retirement annuity, in the event of the employee's death before retirement, only returns the premiums paid or the cash value, whichever is larger, the retirement income policy pays $1,000 for each $10 unit of monthly income or the cash value, whichever is larger.[5] The excess of the death benefit over the cash value represents the insurance element. The amount of insurance protection decreases as the cash value increases and eventually declines to zero when the cash value equals the face of the policy. The type of insurance involved is decreasing term since it is both temporary and reducing in nature. The effective amount of insurance protection afforded by a retirement income policy of one large life insurance company, issued to a male employee at age 45, is shown in Table 4. If the policy had been issued at a younger age the cash value would have accumulated more slowly and the effective amount of insurance would have been somewhat larger and extended over a longer period. In policies which provide $1,500 of

[4] Technically, the retirement annuity contract contains a minor insurance element in that, during the first few years after issue, the accumulated value of paid-in premiums exceeds the cash value of the policy.

[5] Some retirement income policies provide $1,250 or even $1,500 of insurance for each $10 unit of monthly income.

Table 4

Death Benefits per $10 of Monthly Income Available Under Retirement Annuity and Retirement Income Contracts Issued to Male Employee Age 45*

Duration or Years After Issue	*Retirement Annuity Contract*†	*Retirement Income Contract*		
		Death Benefit	*Cash Value*	*Insurance Element*
1	$ 70.97	$ 1,000.00	$ 33.00	$ 967.00
2	141.94	1,000.00	97.49	902.51
3	212.91	1,000.00	163.54	836.44
4	283.88	1,000.00	231.26	768.74
5	354.85	1,000.00	300.75	699.25
6	425.82	1,000.00	372.15	627.85
7	496.79	1,000.00	445.61	554.39
8	567.76	1,000.00	521.31	478.69
9	638.73	1,000.00	599.45	401.55
10	709.70	1,000.00	680.28	319.72
11	784.01	1,000.00	761.09	238.91
12	868.35	1,000.00	845.20	154.80
13	954.80	1,000.00	933.02	66.98
14	1,043.40	1,024.44	1,024.44	–
15	1,134.24	1,118.14	1,118.14	–
16	1,227.34	1,214.19	1,214.19	–
17	1,322.77	1,312.64	1,312.64	–
18	1,420.58	1,413.55	1,413.55	–
19	1,520.84	1,516.98	1,516.98	–
20	1,623.00	1,623.00	1,623.00	–

* Gross annual level premium for retirement annuity contract, $70.97; for retirement income policy, $79.30.

† During first ten years death benefits equal to gross premiums paid, without interest; thereafter death benefits equal to cash value.

insurance for each $10 of monthly income, an insurance element will be present until shortly before retirement. For comparative purposes, the death benefit that would be available under a retirement annuity contract issued at age 45 is included in Table 4.

If the insurance company writes disability income insurance, upon evidence of insurability and the payment of an additional premium it will attach a disability income rider to the insurance or annuity contracts issued under the pension trust agreement. The endorsement would be the standard rider which in most cases would provide a monthly income of $5 or $10 per $1,000 face amount of insurance in the event that permanent and total disability commences before age 55 or 60. Total disability is presumed to be permanent after it has continued for a period of six months. Premiums are waived and the income payments are continued as long as the disability exists but not beyond the maturity date.

Premium Rates and Dividends.—The retirement annuity and retirement income contracts issued under the provisions of a pension plan are usually the standard contracts available to any member of the public. The policy provisions and actuarial assumptions are the same as those contained in contracts issued to individual policyholders, although restrictions on the exercise of certain rights in the contract are likely to be written into the pension trust agreement. As in all individual contracts, the premium rates and annuity benefits applicable to any particular contract are guaranteed for the lifetime of that contract. The insurance company, however, makes no guarantee as to the rates which will apply to contracts issued in the future to new participants or to old employees who qualify for additional retirement benefits. Such contracts are subject to the rate basis currently being applied by the insurance company. Thus, all contracts issued pursuant to a pension trust agreement will not necessarily contain the same actuarial assumptions.

Contracts written by mutual life insurance companies, and those written by some stock companies, are credited with dividends, if earned. Any such dividends are credited against the employer's contributions for the following year, even in the case of contributory money purchase plans. This disposition of dividends is dictated, in effect, by a Treasury ruling that a qualified pension plan must provide "definitely determinable benefits" to the employees after retirement.[6] The view is held that the use of dividends to provide paid-up units of retirement benefits would violate the requirement that the benefits under the plan be "definitely determinable." Contributory plans, predominantly of the money purchase type, covering the employees of nonprofit organizations sometimes provide that dividends attributable to employee contributions will be applied to the purchase of additional benefits, but such a provision is feasible

[6] Section 29.165-1, Regulations 111.

only because of the tax-exempt status of the corporation and the special tax treatment accorded the employees of such organizations.[7]

Dividends are earned on the same basis as that applicable to all other contracts of the same type written by the insurance company. That is, dividends are derived from company-wide experience rather than the segregated experience of the one pension plan.

Group Plans

The individual contract plan is normally confined to a group of employees which is not large enough to qualify for coverage on a group basis. In fact, many insurance companies will not write an individual contract plan on a group of more than 100 or 200 employees, although a company that does not write group insurance may impose no limit on the number of lives that may be included.[8] In terms of total employee coverage, however, group pension plans overshadow individual contract plans.

Plans with widely varying characteristics are combined in the general category of group pensions. At one extreme are found plans which differ only slightly from the individual contract plan, while at the other extreme plans will be found which closely resemble self-administered trusteed plans. The plans will be discussed in the order in which they depart from the pattern of conventional insurance principles.

Group Permanent Plans.—The group permanent type of pension plan is essentially the individual contract plan modified to conform to the principles of group underwriting and administration. The insurance company takes the place of the trustee, and the master contract between the employer and the insurance company supplants the trust agreement. All the provisions of the pension plan

[7] An employee of an organization exempt from taxation under Section 501(c)(3) of the Internal Revenue Code of 1954 is not required to include in his income the contributions made by the employer toward the purchase of his retirement benefits, even though the plan fails to satisfy the requirements of Section 401(a) of the Code and the rights of the employee are nonforfeitable. The contributions of the employer become taxable to the employee, however, when the benefits are actually received. See Section 29.22(b)(2)-5, Regulations 111 and PS No. 17, August 24, 1944.

[8] Some individual contract plans cover up to 8,000 or 10,000 employees, but plans of such size are definitely the exception and can be serviced only by the largest pension firms.

are incorporated in the master contract, and each eligible employee receives, as evidence of his participation in the program, a certificate which contains a summary of the important provisions of the plan. Individual contracts are not issued. The employer remits all premiums to the insurance company, and the latter pays all benefits of the plan directly to the employees. Premiums may be payable monthly or annually and, if the plan is contributory, the employer reimburses himself by means of payroll deductions.

The plan must meet the legal requirements for group insurance, the most basic of which is that there must be at least 25 employees in the group. This is a matter of state regulation, and some states still require as many as 50 employees. Irrespective of the legal minimum, many insurance companies will not issue a group contract on fewer than 50 to 100 lives. If the plan is noncontributory, all eligible employees must be covered; if contributory, at least 75 per cent of the eligible employees must be enrolled. This latter requirement is for the purpose of avoiding adverse selection.

The insurance is written without evidence of insurability up to the limits specified in the plan. The only requirement is that the employee be at work on the day that the insurance becomes effective. The amount of insurance which the insurance company will issue on the automatic, "no-evidence"[9] basis to any one employee is determined by the same underwriting limits that apply to the writing of group life insurance on the term basis. The individual limit is a function of the total volume of insurance on the group and the amount on the lives of the 50 employees with the largest coverage. For example, if there is $1,000,000 of insurance on the group, and each of 50 employees is covered for at least $5,000, then any member of the group might obtain up to $15,000 without giving evidence of insurability. If an employee is entitled to more insurance by the benefit formula than the master contract permits on a "no-evidence" basis, he can obtain the additional amounts by meeting the medical requirements of the insurance company. If he should prove uninsurable at standard rates, many companies will write the insurance on a substandard basis, at least one company being willing to write up to 1000 per cent extra mortality. Otherwise, the additional retire-

[9] "No-evidence" is to be distinguished from "nonmedical," in connection with which a health statement is always required and a medical examination may be prescribed at the option of the company.

ment benefits will be provided in the form of a retirement annuity, which contains no insurance feature and, hence, requires no medical examination. The latter procedure is used in the case of an employee whose retirement credits entitle him to more insurance than the insurance company is willing to write on one individual, even on a medical basis.

A. Basic Features of the Plan.—The group permanent plan is appropriate only for those pension plans which provide a death benefit as well as income at retirement. Theoretically, the plan can be underwritten by any type of life insurance or annuity contract which develops a cash value, but, as a matter of practice, the retirement income contract is generally used. The popularity of the retirement income contract is undoubtedly traceable in great measure to the fact that the group permanent arrangement grew out of the individual contract pension trust, which has utilized the retirement income policy almost exclusively. Another factor, which, however, may reflect the same influence, is that virtually all pension plans which include an insurance feature set the amount of insurance at $1,000 for each $10 of retirement benefits.[10] As it happens, the retirement income contract is the only policy that can produce a $10 retirement benefit out of a face amount of $1,000 of insurance. No policy, however, can produce death and retirement benefits in the exact proportion of $1,000 to $10, respectively. The retirement income policy in its later years provides an effective death benefit

[10] An interesting exception is the widely publicized Module plan introduced in 1953 by The Mutual Life Insurance Company of New York. This plan provides a death benefit before retirement equal to the commuted value of the guaranteed instalments after retirement, payments under the annuity being guaranteed for either five or ten years, usually five. If a life annuity with five years certain and continuous payments is prescribed, the death benefit is $560 per $10 of monthly life income; if 120 monthly payments are guaranteed, the death benefit before retirement is $1,120 per $10 of monthly retirement income. In addition to the normal death benefit, which is included in all Module plans, the employer may elect to provide, on behalf of married male employees only, a supplemental death benefit, called the widow's pension but payable to any beneficiary including the employee's estate, equal to one-half of the retirement benefit that would have been payable to the employee had he lived to age 65, but not in excess of $100 per month. This benefit, patterned after the familiar family income rider, is payable from the date of the employee's death until the date he would have attained age 65 but may be commuted at any time. The basic death benefit is payable in a lump sum but the beneficiary may elect at the time of the employee's death to take the proceeds as income.

greatly in excess of $1,000 per $10 unit of retirement income. If an employee should die shortly before retirement, his estate or designated beneficiary would receive $1,582 to $1,706, depending upon the company, for each $10 of retirement benefits.

Some employers wish to avoid the additional cost involved in providing a death benefit in excess of the face of the policy and, therefore, prefer a benefit formula that promises a level death benefit of $1,000 for each unit of retirement income.[11] That type of plan can be financed by an ordinary life, life paid-up at 65, endowment at 65, or any other type of level premium contract. Under none of these contracts, however, will the cash value at 65 be sufficient to provide a monthly income of $10 for each unit of insurance. This means that the cash value will have to be supplemented at retirement by funds accumulated in some other manner.

The additional sums may be supplied out of the current revenue of the employer, or they may be accumulated in an auxiliary or "side" fund. It is customary to accumulate the required cash by means of a fund administered on the deposit administration plan by the same life insurance company that underwrites the group permanent policies.[12] In fact, the agreement governing the administration of such a fund is usually made a part of the master contract by means of a rider. Occasionally the additional money is accumulated through a trust arrangement, which converts the program into what is known as a combination plan, the details of which are discussed later in this chapter.[13]

B. Benefit Structure.—

(1) Retirement Benefits.—The group permanent plan can be adapted to any type of benefit formula, but it is most widely used with a formula which bases the benefit on compensation, either as a flat percentage of earnings or as a unit of benefit for each year of service. Under either arrangement, the benefits are purchased on a level premium basis in units of $5 or $10 monthly income on the assumption that earnings will continue at the same rate until retire-

[11] The cost of that portion of the death benefit in excess of the face amount of the retirement income contract is nominal, amounting to between 2 and 3 per cent of the gross premium.

[12] See pp. 101-09 for a description of the deposit administration type of group annuity contract.

[13] See pp. 121-25.

ment. As under the individual contract plan, salary changes are recognized only if they are large enough to add or take away a unit of $10 monthly income. Furthermore, such changes are taken into consideration only on the contract anniversary. This procedure is followed in order that all premiums will fall due at the same time and all coverages for a particular employee will mature at the same time. Most companies will provide short duration coverage for salary increases within the ten-year period preceding the normal retirement date.

The benefits are normally payable under a life income option with payments guaranteed for five or ten years. Other annuity forms are available, however, and the employee is usually given the right to elect the optional forms up to the date of retirement. The adverse selection which is made possible by this privilege is usually hedged by the use of special rates for the optional settlements, frequently arrived at by a one-year setback in the employee's age.

(2) Withdrawal Benefits.—Severance benefits are based on the policy cash values, including in some instances any sums that may have been accumulated in an auxiliary fund, except that with respect to the latter the sums are released only if the employee be in good health at the time of his withdrawal.[14] Unless employer contributions have vested, the withdrawing employee is entitled to only that portion of the cash values that is attributable to his contributions.

The withdrawal benefit is equal to the cash value under the policy, which, contrary to the procedure prescribed for individual policies under the standard nonforfeiture legislation, is based on the full level reserve, less a surrender charge. Designed to reimburse the company for first year expenses in excess of the loading, this charge will usually not exceed $5 or $10 per $1,000 during the first policy year and will decrease each year thereafter, terminating completely from five to ten years after issue. In some companies, the employee receives the full level reserve, the employer absorbing the charge for expenses in the credit which he is allowed against future contributions.

The employee may elect paid-up benefits for whatever amounts can be purchased at net premium rates with his cash value and any other values vested in him. In such event, the employee may obtain, without evidence of insurability, any plan of insurance other than

[14] See pp. 97-98 for an explanation of the good health requirement.

term in an amount equal to the difference between the amount of insurance terminating on his life and the amount of paid-up insurance to which he is entitled. The conversion is usually on an attained age basis, although some companies have offered the conversion privilege on the original age basis. The latter procedure may result in the issuance of several policies to one terminating employee, since a separate policy would have had to be issued for every increase in benefits.

(3) Death Benefits.—As has been indicated, death benefits prior to retirement are always provided under group permanent contracts. The minimum benefit is $1,000 for each $10 unit of retirement income, while, if the retirement income contract is used, the benefit may be much larger than that. The death benefit may be taken under the same settlement options as those available under individual policies, except that the interest option is not usually available. The options may be selected by either the insured or the beneficiary.

The normal annuity form under group permanent contracts is a life income with instalments guaranteed for either five or ten years. The employee, however, may elect an annuity which will provide a larger death benefit than the normal annuity form. In such case, the insurance company, to protect itself against adverse selection, levies a selection charge, usually in the form of a one-year setback of the employee's age. This procedure automatically produces a charge of about 3 per cent of the maturity value.

(4) Disability Benefits.—Two types of disability benefits may be available under group permanent plans: waiver of premium and income payments. The benefits are available only for permanent and total disability.

The waiver of premium benefit is identical with that available under individual contracts. Most contracts provide that premiums will be waived after the employee has been totally disabled for a period of six months prior to his sixtieth birthday. Many employers prefer to continue premiums on disabled employees and, in effect, administer their own disability provision.

The income benefits are likewise conditioned on the existence of total disability for a period of six months prior to age sixty. The monthly payments, the number and size of which depend upon the amount of insurance in force on the life of the employee, are deductible from the face of the policy or policies. This is based on the theory that the occurrence of total disability matures the insurance. If the disabled employee should die before the disability payments have exhausted the insurance, the unliquidated balance is paid to his estate or designated beneficiary, either in a lump sum or as a continuation of the income.

If the employee recovers from his disability prior to his normal retirement date and resumes his service with the employer, his insurance coverage is revived but is limited in amount to the commuted value of the remaining unpaid instalments. Recovery from disability after the employee's normal retirement age is ignored. The liquidation of the insurance coverage through the payment of disability benefits does not affect the retirement benefits that would otherwise be payable to the employee, although, of course, the disablement may prevent the employee from qualifying for any retirement benefits.

C. Premiums and Rates.—

(1) Rate Factors.—With respect to mortality prior to retirement, or the insurance coverage, most companies use the Commissioners' Standard Ordinary Table, although some still use the American Men(5) Table. For mortality after retirement virtually all companies are using the 1937 Standard Annuity Table, in some cases with the ages set back one year. A few companies are using annuity tables which have been developed within recent years.[15] The interest rate assumed is generally 2½ per cent, although some companies are using lower assumptions. The loading is usually around 12 or 13 per cent of the gross premium, which is lower than that of individual contracts and higher than that of deferred group annuity contracts. The benefits which are purchased from the auxiliary fund, when a contract other than the retirement income policy is used, are generally purchased at regular group annuity rates, except that the

[15] For instance, the Module plan referred to in footnote 10 calculates the maturity value of the annuity on the basis of the 1949 Annuity Table without projection (see Appendix D) and 2½ per cent interest with no loading. The insurance benefits, however, including the pure endowment used to accumulate the maturity value of the annuity benefits, are calculated on the basis of the C.S.O. Table and 2½ per cent interest, with a loading which approximately reproduces the "U" rates promulgated for group life insurance by the Insurance Department of the State of New York.

rates sometimes carry a lower loading than the customary 5 to 8 per cent in recognition of lower acquisition costs and other expenses.

(2) Rate Guarantees.—As under the individual contract plan, each unit of retirement benefit is purchased by a level annual premium payable to the normal retirement age from the date on which the employee qualified for the benefit. This means that the premium and annuity rates are guaranteed for the lifetime of each unit. Furthermore, the master contract usually specifies that no rate changes will be applicable to policies issued under the pension plan for a period of three to five years, depending upon company practice. Thereafter, any new rates that might be promulgated by the company would be applicable to any additional units of benefits purchased for new or old employees.

The same rate guarantees will normally apply to the benefits which are to be provided by an auxiliary fund. In other words, sums set aside to purchase specific units of benefits will carry a rate guarantee with them to the date of conversion. Additional units will be subject to the rates which are in effect at the time they are set up, but all sums set aside to purchase the benefits at retirement enjoy a guaranteed conversion value. When such a guarantee is not given by the insurance company, the employer must make up any deficiencies that might arise.

D. Employer Credits.—The group permanent contract ordinarily provides certain credits to the employer, which, in order to meet the requirements of the Internal Revenue Code, cannot be paid in cash but must be applied against future premiums under the contract.

(1) Withdrawal Credits.—The total withdrawal credit under a group permanent contract is equal to the reserve less a deduction that may amount to $5 or $10 per $1,000 of insurance during the first policy year and reduces to zero by the end of ten years at the longest. The employer's credit is equal to the total withdrawal credit less the amount credited to the employee. If the employee takes advantage of the conversion privilege, the employer credit is allowed immediately only if the employer furnishes satisfactory evidence that the employee is in good health. In the event that evidence

of good health is not furnished, the employer withdrawal credit is allowed only if the converted policy remains in force for five years or if it terminates other than by death within the five-year period. In the latter event, the withdrawal credit is granted in the form of a pure endowment payable at the end of five years.

(2) Deferred Retirement Credits.—The normal method of handling delayed retirement under group permanent plans is to continue the normal salary of the employee and credit the employer with the benefits that would have been paid to the employee if he had retired

(3) Dividends or Premium Rate Adjustments.—Group permanent policies are normally credited with dividends, if underwritten by a mutual company, or with experience credits, if a stock company is on the risk. As a rule, the dividends are calculated in precisely the same manner as those of deferred group annuities, which procedure is described in a later section. Each plan is treated as a unit for dividend determination, with the degree of credibility increasing with the size of the case.

E. Suspensions.—Some group permanent contracts contain a "stop and go" provision under which the employer may temporarily discontinue the permanent insurance and later reinstate it. Upon suspension of the plan, the full termination value of each employee's insurance and retirement annuity, if any, is applied to purchase paid-up insurance and a paid-up retirement annuity. The cash values under such policies can be withdrawn only on termination of employment. Each employee is protected during the period of suspension by yearly renewable term insurance in an amount equal to the difference between the original amount of permanent insurance and the amount of reduced paid-up insurance. New entrants to the plan during the period of suspension receive term insurance in accordance with the benefit formula.

Premium payments on the permanent insurance can be resumed on notice to the insurance company. The reversion to permanent insurance is made on the basis of attained age rather than original age, thus relieving the employer of the necessity of repaying in one sum the premiums which were suspended. Retirement benefits are not affected since the attained age insurance plus the paid-up insurance will provide the benefits promised under the formula. The right to suspend premium payments on the permanent insurance may not be exercised more often than once every five years and not more than three years may elapse during a period of suspension.

F. Discontinuance.—On discontinuance of a plan, all benefits which have been purchased become fully vested in the employees regardless of the vesting formula applicable before discontinuance. A termination charge is levied to cover unamortized expenses, the balance being applied to purchase paid-up insurance and paid-up annuities. Any policy which has been in force for at least five years may be converted to any type of permanent insurance and continued by the employee. These paid-up benefits are purchased at net single premium rates. The employees retain the same right to optional retirement as they would have had if the pension plan had remained in effect.

The sums in the auxiliary fund, if any, also vest in the employees upon discontinuance of the plan, but the vesting may follow a system of successive preferential classes of employees rather than a pro rata formula. It should be understood, of course, that any sums in the auxiliary fund attributable to employee contributions would be returned to the proper employees, either in cash or as deferred pension credits.

Any undistributed employer withdrawal credits or dividends arising after the date of discontinuance are usually distributed in the form of paid-up benefits among the active employees who were covered under the plan at the time of its discontinuance. The distribution may be made on any equitable basis, the most common one being in proportion to the reserves.

Deferred Group Annuity Plan.[16]—In terms of coverage, the deferred group annuity is the most important contract developed by the life insurance companies to underwrite pension plans. At the end of 1953, 2,285,000 employees were covered under 3,280 deferred group annuity contracts.[17]

The contract is relatively free from statutory controls. Only four

[16] For a comprehensive discussion of group annuities, see Kenneth Black, Jr., *Group Annuities* (Philadelphia: University of Pennsylvania Press, 1955).

[17] *Life Insurance Fact Book*, 1954, p. 31.

states—New York, Massachusetts, North Carolina, and Louisiana—have statutes specifically directed at group annuities. None of these statutes prescribes a minimum number of lives, although the New York law has been interpreted to require a minimum of two lives. At one time a few states ruled that their group insurance laws applied to group annuities, thus requiring a minimum of 25 lives, but all such administrative rulings have now been rescinded. In all states other than New York, therefore, the number of lives to be covered is a matter of insurance company underwriting practice.

Most companies require a minimum of 25 lives, but there is a trend toward reducing the minimum in order to reach the small case market. At least one large company has no published minimum, while another is extending its group annuity services to employers with as few as ten eligible employees. Virtually all companies require 100 per cent participation if the plan is noncontributory, and 75 per cent participation if contributory.

Apart from the number of lives required, most companies have either a minimum premium requirement or levy a special administrative charge on cases developing a premium below a specified minimum. The minimum annual premium may be expressed in terms of an aggregate, e.g., $10,000, or in terms of an average premium per covered employee, such as $250. With respect to administrative charges, one company assesses a charge of $750 on all contracts with an annual premium of less than $50,000, while another levies a charge of $600 on all contracts producing premiums of less than $200,000. There is no upper limit to the number of lives that can be covered under a group annuity contract.

The underlying legal document is the master contract which, along with the application, if attached, constitutes the entire contract between the employer and the insurance company. The provisions of the pension plan are incorporated in the master contract, and each employee receives a certificate which contains those clauses of the master contract which directly affect his rights or those of his beneficiary. Legally, this certificate is merely evidence of participation in the plan and is not a contract between the employee and the insurance company. Nevertheless, the employee is considered to be a third party beneficiary under the master contract and, as such, can enforce his rights created thereunder. As is true with all group plans, no trust arrangement need be used.

Since no mortality risk is involved, no evidence of insurability is required for participation in the plan.

A. Benefit Structure of the Plan.—The group annuity contract is designed for the payment of retirement benefits. Any other benefits that may be provided under the contract are incidental to and, perhaps, even inconsistent with the main objective. The mechanism by which the basic benefits—those payable at retirement—are provided is described in the following section.

(1) Retirement Benefits.—The group annuity contract can be used to finance any type of retirement benefit, but it is best suited to a formula which provides a unit of benefit for each year of service. The benefit may be expressed as a flat amount for each year of service or as a percentage of earnings. The typical group annuity contract provides a specified percentage of current earnings for each year of service. For purposes of administrative convenience, a schedule of salary classes is frequently established, and the percentage is applied to the midpoint of the appropriate salary bracket.

The benefits are provided through the medium of a deferred life annuity. This is a type of annuity under which the income payments do not commence until a specified period has elapsed. The typical period of deferment extends from the date of purchase to the attainment of a specified age by the annuitant. A *pure* deferred life annuity refunds no part of the purchase price if the annuitant should die before reaching the specified age, the sum thus released being used by the insurance company, as is implicitly provided in the rate structure, to increase the annuity payments of those who survive. The *refund* deferred life annuity, on the other hand, returns the purchase price, with or without interest, if the annuitant should die before the annuity payments commence. In a typical group annuity plan, the employer's contributions are used to purchase pure deferred annuities, inasmuch as it is not intended that the estate of the deceased employee should receive the employer's contributions. In a contributory plan, however, the employee's contributions are used to purchase refund annuities, since the employee must be assured that his estate will recover his contributions in the event that he should die before retirement. If the employer's contributions are to vest upon death, the same type of contract would be purchased with the employer's contributions.

These annuities are purchased on a single premium basis.[18] In other words, each unit of benefit is purchased in full for the employee in the year in which it is earned. If an employee earns a retirement credit of $45 in a particular year, there will be purchased for his account, in the same year, a single premium deferred annuity that will provide him with an annual income of $45 at normal retirement age. Each year that he participates in the plan an additional paid-up deferred annuity in the appropriate amount will be purchased for his account. At retirement, the employee will be entitled to the income from a series of paid-up deferred annuities purchased for him over the entire period of his participation, the cumulative income from which will equal the total credits granted by the pension formula.

With respect to an individual employee, the premium outlay per dollar of retirement income increases from year to year as the employee approaches retirement. For example, the single premium for a pure deferred life annuity that will provide an income of $1 per year at age 65 is only $3.80 at age 30, but by 35 it has increased to $4.36 and at 45, 55 and 60, the premium is $5.83, $8.22 and $10.10, respectively.[19] Moreover, the earnings of an employee normally rise over the years, which further inflates the cost of providing his retirement benefits. From the standpoint of the entire employee group, however, turnover and deaths will normally have the effect of leveling out the over-all outlays for future service benefits. The prime consideration is the age composition of the employee group.

Past service benefits may likewise be purchased with a lump sum payment, but, for tax reasons, or because of the burdensome financial obligation involved, the accrued liability of a pension plan is normally liquidated over a period of years. In order to prevent the liquidation of this obligation during the most favorable tax period, the tax laws permit the employer to deduct in any one taxable year only 10 per cent of the *initial* past service liability.[20] Since the initial

[18] It is possible to fund a group annuity plan on a level premium basis but, with the exception of money purchase plans, it is not customary to do so.

[19] Rates are based on the 1937 Standard Annuity Table, 2½ per cent interest, and loading of 8 per cent of gross premium.

[20] Section 404(a)(1)(C), I.R.C. and Section 29.23(P)-7, Regulations 111. Actually, the limitation stated above is only one of three tests applied by the Treasury authorities to gauge the reasonableness of employer contributions to pension plans. See pp. 134-36 of this volume.

past service liability is an interest-bearing item, representing a discounted value, liquidation at the rate of 10 per cent per year requires between 11 and 12 years, depending upon the rate of interest assumed. Apart from the statutory limitation, many companies, in an effort to regularize their premium income and to protect themselves against adverse financial selection, will not permit an employer to pay off more than 10 per cent of the initial past service liability in any one contract year. Such companies are fearful that, without such a limitation, the employers might make large past service payments in a period of low investment yields. Furthermore, with no restrictions, if the insurance company should give notice of an impending rate increase, the employer might pay off all or a large part of the past service liability before the change becomes effective.

As a matter of fact, however, liquidation of the past service liability at too slow a rate is a more serious problem than the reverse. As a consequence, most companies require that such accrued liability be completely amortized within a specified period of time. Except in unusual circumstances, no company would compel an employer to amortize the past service liability over a shorter period than that permitted by Federal tax regulations and, in practice, most companies allow the past service payments to be spread over a period of twenty years or more.

Since all past service credits are normally not purchased at one time, a policy must be established to govern the allocation of past service contributions to the purchase of individual annuities. A fundamental consideration in this respect is the fact that virtually all insurance companies require that the retirement benefits of an employee be purchased in full before the employee retires. To implement this requirement, most group annuity contracts stipulate that, should an employee reach retirement before his past service annuity has been fully purchased, the contributions to complete the purchase are due immediately.[21] In view of this, the customary practice is to allocate past service contributions to the purchase of

[21] If the average age of the covered employees is higher than normal, this requirement may force the employer to liquidate more than 10 per cent of the initial past service liability each year. This would not penalize the employer tax-wise, since under such circumstances the payments would undoubtedly be deductible under the straight-line rule.

individual annuities in the order of nearness to retirement. In other words, the past service credits of those employees who are within one year of retirement would be purchased first, those for employees within two years of retirement next, and so on.

Occasionally, a plan will specify that past service credits shall be purchased in the order of seniority in order to protect the rights of employees with the longest periods of service. While this method may be equitable, it permits an employee with a shorter period of service than normal to reach retirement before his past service credits have been purchased, thus requiring an additional contribution from the employer.

Finally, a group annuity contract may provide that each past service contribution will be applied to the purchase of a pro rata share of the unpurchased past service credit of each employee. The advantage of this method is that each employee who is entitled to past service benefits is credited with an appropriate share of the employer's past service contributions each year, so that if the plan should be discontinued, all employees would have the same proportion of their past service annuities purchased for them. The principal disadvantage of this arrangement is that until the past service liability has been completely liquidated employees will reach retirement with a portion of their past service annuities unpurchased, and the employer will have to make supplemental payments for them. Consequently, this method is frequently modified to provide that past service contributions paid during a particular contract year shall be first applied to the purchase of any remaining unpurchased past service credits of employees who are retiring within the year, after which any balance is applied, on a pro rata basis, to the purchase of past service annuities for the other employees. Administratively, the pro rata method is burdensome, since each employee must be credited with a portion of the past service contribution, but the work is reduced to some extent by accumulating, with interest, all payments during a contract year to the end of the year and crediting them at one time.

(2) Withdrawal Benefits.—The rights of an employee to the annuities purchased by the employer's contributions upon termination of his employment depend upon the vesting provisions of the plan. The employee may be entitled to all or none of such annuities. In

some plans, he may be permitted to retain the annuities purchased by a portion but not all of the employer's contributions.

In a contributory plan, the employee is assured of a return of his contributions with or without interest. If interest is allowed, the rate is usually 2 per cent compounded annually. It is not customary to credit the contributions with any interest in the contract year in which they are made. In the year of termination, however, interest on the contributions of all prior years is credited for all completed months.

The employee usually is given the alternative of withdrawing his contributions in cash, in which event the annuities which have been purchased for his account would be cancelled, or leaving his contributions with the insurance company and retaining the paid-up deferred annuities which they have purchased along with the vested portion of the paid-up benefits, if any, purchased by employer contributions. If the amount of the paid-up benefit is less than a specified minimum, normally $10 per month, the insurance company usually has the right to make a cash settlement. Some companies permit the election of the paid-up annuity option for benefits as small as $40 per year, but where the annual amount is less than $120, payments are made quarterly rather than monthly. If the employee elects a paid-up deferred annuity, he nevertheless retains the right to withdraw its cash value at any time prior to his normal retirement date. A few group annuity contracts permit an employee, usually subject to employer consent, to withdraw his contributions without terminating his employment, but most contracts contain prohibitions against this practice.

(3) Death Benefits.—At the death of an employee before retirement, any contributions which he may have made are payable to his estate or designated beneficiary. It is customary to credit such contributions with interest, although a slightly higher retirement benefit or, conversely, a lower cost to the employer, may be obtained if the contributions are returnable without interest. Interest credits are calculated in the same manner as for withdrawal benefits, which means no interest on a contribution during the contract year in which made, with interest thereafter on completed portions of any year.

As in the case of withdrawal from employment, the disposition of the employer's contributions depends upon the vesting provisions of the plan. It is not customary to grant death benefits with respect to employer contributions under a group annuity contract, although such benefits could be provided by the purchase of refund deferred life annuities with the employer's contributions.

Most group annuity contracts permit the use of settlement options. The optional settlement may be arranged in advance by the employee or elected by the beneficiary after the employee's death. In either event, it is customary to provide that the death benefit will be paid in a lump sum if it is less than a specified minimum, usually $1,000.

Death benefits after retirement depend upon the type of annuity elected. Under noncontributory plans, the normal form of settlement is usually the straight life annuity with no death benefits. The normal form of annuity for contributory plans is typically the modified cash refund annuity, under which the deceased's estate or designated beneficiary will receive at his death a sum equal to the difference between the accumulated value of his contributions, with interest, at retirement and the aggregate amount of income payments received by the employee before his death. Virtually all group annuity contracts permit the employee to elect an option, on an actuarially equivalent basis, which provides a death benefit, or a larger benefit, as the case may be, but such election must be made at a specified time prior to retirement, such as one, two, or five years, or else must be accompanied by evidence of insurability. This is to protect the insurance company, and, indirectly, the employer, against adverse selection.

(4) Disability Benefits.—Disability benefits are available under group annuity contracts only in the form of early retirement provisions, which have been previously discussed. The employer, of course, may provide such benefits on a pay-as-you-go basis, but it is not the policy of life insurance companies to underwrite the permanent disability hazard in connection with a group annuity contract.[22]

[22] Disability benefits were available under early group annuity plans, and the claims experience was not unfavorable. The coverage was eliminated from group annuity contracts in the interest of uniform underwriting practices when, with few exceptions, the life insurance companies, in the face of extremely adverse loss experience, eliminated permanent disability coverage from their individual life insurance contracts. See R. A. Hohaus, "Further Remarks on Group Annuities," *Record of the American Institute of Actuaries*, Vol. XXIII, 1934, p. 338.

B. Premiums and Rates.—Premiums for deferred group annuity contracts reflect only three factors: mortality, interest, and expenses, including an allowance for contingencies. Contrary to the practice in some plans, notably self-administered plans, the rate structure does not take into account withdrawal rates and anticipated increases in salary, since these two variables are not reliably predictable. Moreover, they are subject, to some extent, to the control of the employer and his employees.

(1) Rate Factors.—Early group annuity contracts were generally written on the basis of the American Annuitants Table and the Combined Annuity Table, in that order, but since 1939 practically all new plans have been based on the 1937 Standard Annuity Table. Continued improvement in mortality, with the consequent narrowing of safety margins, has caused some companies to rate the 1937 Standard Annuity Table down one year.[23] Female lives are normally set back five years, which means that if male ages are set back one year, female ages are set back six years. Recent studies of annuitant mortality indicate that the margins in the table, adjusted in this manner, may not be adequate to absorb anticipated improvement in mortality.[24] Consideration is currently being given to the development of group annuity tables that will make an allowance for future improvement in mortality.

The interest assumption used in connection with group annuity rates is usually 2 or 2¼ per cent. A few companies use a rate as high as 2½ per cent. This is in contrast to the 4 per cent rate used in group annuity contracts issued before 1934. Declining yields on investments compelled the companies to lower their interest assumption time after time until the present low rates were reached.

The interest assumptions currently being used for group annuity contracts are generally lower than those used for life insurance contracts. The rates were deliberately made conservative in order

[23] When an annuity table is rated down one year in age, the mortality rate at Age x in the rated table is the same as the mortality rate at age x-1 in the unrated table. In simple terms, it means that the annuitants at all ages are assumed to be one year younger than their actual age, which produces a lower rate of expected mortality than that of the unrated table.

[24] See W. A. Jenkins and E. A. Lew, "A New Mortality Basis for Annuities," *Transactions of the Society of Actuaries*, Vol. I, November 1949, pp. 369-466, and Ray M. Peterson, "Group Annuity Mortality," *ibid.*, Vol. IV, June 1952, pp. 246-307.

to hedge against adverse mortality experience, which, in the case of annuities, means excessive longevity. The trend toward greater longevity which has been so evident during the last half-century has had the effect of gradually reducing the safety margins included in the static annuity tables used by the life insurance companies.[25] The 1937 Standard Annuity Table, for example, was outdated at some younger ages almost as soon as it was published. Rather than adopt a new table, the companies have preferred to use a considerably lower rate of interest than they expect to earn. In this connection, it has been estimated that an interest margin of ¼ per cent will absorb a general improvement in mortality of 6 to 7 per cent. Any interest margins that are not needed to cover improvements in longevity are available for dividends or experience credits.

The loading factor in group annuity rates is generally 5 to 8 per cent of the gross premium. This factor is designed to cover not only the expenses connected with the contract but also an allowance for contingencies. As a matter of fact, the proportion of the loading charge that is allocated to expenses is much smaller than that allocated to the accumulation of a contingency reserve. Studies have indicated that, on the average, expenses absorb about 2½ or 3 per cent of the gross premium, while the remainder of the loading charge is applied toward the accumulation of a contingency reserve or released through the dividend formula.[26] Furthermore, approximately one-third of the expenses are accounted for by taxes, primarily premium taxes. A portion of the expense allowance is set aside as a reserve for future expenses since the annuities are purchased with single premiums.

In order to protect themselves against excessive longevity of annuitants, a possible decline in investment yields below the rate of interest assumed in actuarial calculations, capital losses, new taxes, and other unforeseen developments, the insurance companies feel that it is necessary to maintain a fund over and above the statutory reserves. In some states, a contingency fund is required by law. At

[25] A static annuity table is one which purports to reflect the death rates among annuitants as of a fixed date or for a designated period in the past. It is to be contrasted with a table which by means of projection factors would attempt to anticipate future improvement in mortality. The use of annuity tables with mortality projection factors is presently being considered.

[26] An analysis of group annuity expenses is presented in Chapter V of this volume.

any rate, most companies attempt to accumulate a contingency reserve of the order of 4 to 6 per cent of the group annuity statutory reserves. As experience unfolds and the reserve is revealed to be redundant, a portion can be released to the employer as a credit against future contributions.

(2) Rate Guarantees.—Many of the group annuity contracts issued before 1935 were underwritten with a lifetime guarantee. Such a guarantee usually provided that rates could be changed on or after the fifth anniversary of the contract but that no change in rates would apply to annuities purchased for employees covered under the plan prior to the date of the change. Some contracts with lifetime guarantees provided that rates could not be changed more often than every five years. A few such contracts stipulated that the rates could be increased by not more than a certain percentage of the original rates within any five- or ten-year period.

The lifetime guarantee in group annuity contracts was an obvious extension of the familiar lifetime guarantee under individual insurance policies. It subsequently became evident that such a guarantee is inappropriate for a group annuity contract. In the first place, improvements in mortality, while favorable to life insurance contracts, are decidedly unfavorable to annuity contracts. Since the obligation assumed under a group annuity contract may extend over a period of seventy-five years or longer, continued improvement in annuitant mortality could prove extremely embarrassing. Secondly, the margin in participating group annuities is much smaller than the margin in participating individual insurance policies. This was particularly true when the group annuity contracts were being written on a 4 per cent interest basis. Finally, the benefit formula of a deferred group annuity contract usually bases the benefits on the current earnings of the employee. Unpredictable increases in salary, particularly during a period of inflation, may result in the ultimate purchase of benefits much larger than those anticipated in the lifetime guarantee. In individual insurance contracts the premiums are guaranteed only as to benefits which are fixed at the time the policy is issued.

Since 1935, the practice has been to guarantee the rates initially used in the contract only for premiums received during the first five contract years. Thereafter, the insurance company can specify a new set of rates which will apply to all premium payments, including those applied to the purchase of annuities for employees covered under the plan before the date of the rate change. No change in rates, however, can apply retroactively to annuities purchased before the date of change. After the fifth contract year, guarantees usually run from year to year, except that some contracts provide a longer guarantee after a change in rates or a change in the benefit formula.

Premiums for past service benefits are subject to the same rate conditions that govern future service benefits. Only those benefits which are purchased during the first five contract years receive the protection of the rate guarantee. In order to extend the protection of the initial rate guarantee to all past service benefits, some insurance companies permit the employer to "purchase" all past service benefits on the effective date of the contract by means of a "loan" from the insurance company. The "loan" is repaid in level annual instalments over a period of years, sometimes as long as twenty. If an employee retires or dies during the repayment period, payments for his past service benefits must be continued until the end of the period. The same procedure applies when an employee retires because of ill health or when a terminating employee has a vested interest in his past service credits. Otherwise, in the event of termination, the employer is entitled to the original single premium, plus interest, less a surrender charge to cover expenses, and less the present value of the past service payments which have not been made.

C. Employer Credits.—The group annuity contract, like other plans, provides certain credits to the employer, which, because of statutory restrictions, cannot be paid in cash but must be applied against future premiums under the contract.

(1) Withdrawal Credits.—Since employer contributions are ordinarily applied to the purchase of pure deferred life annuities, in which mortality has been discounted, no refund is usually made to the employer in the event of the death of an employee before retirement. On termination of employment other than by death or retirement, however, the employer is entitled to a credit on account of any annuities cancelled.

Under noncontributory plans the employer's future service withdrawal credit is typically 96 per cent of the future service contributions accumulated at interest. Under contributory plans, the future service withdrawal credit is normally 96 per cent of the employer's contributions with interest, less 4 per cent of the cash value payable to the employee, whether or not he avails himself of the cash option. In other words, the employer absorbs the surrender charge for both sets of contributions, and the employee recovers his contributions in full. If the contract provides for the return to the employee of his contributions without interest and the employee has participated in the plan for a minimum period of three to five years, depending upon the plan, the 4 per cent deduction is not made. The employer's past service withdrawal credit is the greater of 96 per cent of the past service contributions with interest or 100 per cent of such contributions without interest.[27]

This 4 per cent surrender charge is admittedly an approximation. The original loading in the rates is intended to cover all expenses allocable to any given premium payment from the date of payment to the date of the employee's death. When an annuity is cancelled before the employee's death, the unused portion of the loading can be released. The longer the annuity has been in force, the smaller the unused portion of the loading or, conversely, the larger the surrender charge should be. The inference might be drawn that the 4 per cent charge is based on the assumption that, on the average, terminations will occur at that point in time when one-half of the loading has been expended. There is no such statistical foundation, however, for the precise amount of the charge, particularly since a portion of the loading is earmarked for contingencies. Moreover, some companies which load their premiums by only 5 per cent still levy a 4 per cent surrender charge.

There are other respects in which the withdrawal credit formula does not attempt precision. For example, reserves for pure deferred annuities increase from year to year because of benefit of survivorship, while the withdrawal credit makes no allowance for such factor. Furthermore, the interest rate used in the determination of withdrawal credits is usually lower than the rate assumed in premium calculations. Finally, with respect to withdrawal values, in-

[27] If an employer takes his withdrawal credit in cash, the amount is reduced by 5 per cent of the sum otherwise available. The extra charge is levied to protect the insurance company against the possibility of having to liquidate some of its investments in a poor market. The employer may also suffer tax penalties since Treasury regulations prohibit the taking of credits in cash.

terest is normally allowed only from the end of the contract year in which contributions are made, while in the calculation of premium rates interest is credited from the date of payment. It is not essential that the employer's withdrawal credit be calculated precisely, since adjustments will automatically be effected through the dividend formula.

The employer's withdrawal credit is payable only if the employee was in good health at the time of his termination. The reason for this is that the employer's contributions are calculated in the first instance on the assumption that any premiums paid on behalf of an employee who dies before retirement shall be retained by the insurance company and used to provide benefits to those employees who survive to retirement. In other words, employer premiums are discounted for mortality. Therefore, if an employee withdraws from employment because of an impairment that would have certainly caused his death before the normal retirement age, the contributions represented by his annuities should be treated in the same manner as they would have been had the employee died while in service. In the absence of this restriction, an employer could terminate the employment of a seriously ill employee just prior to death and secure a credit that would not be available had the employee died in service. It is only the extra mortality that occurs among terminated employees as a result of health impairments at date of termination that the good health clause seeks to include in the mortality experience under the group annuity contract.

In most cases, the insurance company will rely upon the employer's statement regarding the health of the terminating employee. Where the value of the annuity is unusually large, the company may require a medical examination of the employee. In lieu of this, the employer's withdrawal credit may be used to purchase a pure endowment running for five years. If the employee survives the endowment period, the endowment is then credited to the employer. This arrangement introduces the problem of keeping track of a former employee, as well as the complication of death during the endowment period from a cause unrelated to the impairment at date of termination.

The financial importance of the ill-health provision is revealed by the fact that, in the recent experience of male employees, there has been one ill-health termination for each three deaths among active employees, and all these ill-health terminations were needed to produce an aggregate mortality experience approximating that expected by the 1937 Standard Annuity Table.[28]

To the extent that employer contributions vest in the employee, there will, of course, be no cancellation of annuities and no employer credits.

(2) Deferred Retirement Credits.—As was pointed out previously, various arrangements can be worked out to effect an equitable financial arrangement when an employee continues to work beyond normal retirement age. A procedure which is commonly used in connection with group annuity contracts is to defer the payment of the retirement benefits until the employee actually retires, at which time benefits in the same amount as would have been paid at the normal retirement date are commenced. In this case, the retirement income payments which would have been paid from the normal retirement age to the date of actual retirement are returned to the employer in the form of credits against future premiums under the contract. If the plan provides a death benefit after retirement, however, the credits are retained by the insurance company in a suspense account, on which interest is allowed, to be applied to the payment of the death benefits, if necessary. Once the employee has received retirement benefits equal to the guaranteed death benefit, the sum in the suspense account is credited to the employer. Or if the employee should die before receiving the equivalent of the death benefit, any balance in the account after the death benefit has been paid is released to the employer.

(3) Dividends or Premium Rate Adjustments.—All group annuity contracts make provision for an adjustment in the contributions of the employer if experience warrants it. In a mutual life insurance company such an adjustment is described as a dividend, while in a stock company it is referred to as a rate credit. Except for the smallest plans, the amount of the refund depends primarily upon the experience of the plan in question. This is accomplished through the maintenance of a separate account, called the Experience Account, or Experience Fund, for each group annuity contract.

During any particular contract year, including the first, this indi-

[28] Society of Actuaries, *1949 Report of the Committee on Group Mortality and Morbidity*, pp. 46-47.

vidual account is credited with all premium payments under the contract for that year. The accumulated balance, including premiums for the current year, is credited with the net rate of interest earned on the total investment portfolio of the insurance company, or in some companies, the net rate of interest earned on all investments other than policy loans. The account is charged with benefit disbursements under the contract during the current year, as well as with all expenses allocable to it under accepted cost accounting techniques. It is credited or charged, as the case may be, with a "mortality adjustment" which has the effect of smoothing mortality fluctuations (1) over the years for the particular contract, and (2) among all group annuity contracts written by the company. If the mortality under the contract is lighter than the average for all group annuity contracts during the period, it will be entitled to a credit. If its mortality is heavier than the average, it must share a portion of its "savings" with the less fortunate cases in the form of a charge. The extent to which the mortality experience of a particular contract is modified to reflect the experience of other contracts depends upon the size of the case. Virtually no cases receive 100 per cent credibility for the first year, but after a few years the larger cases receive practically full recognition of their experience. On the other hand, the initial averaging on a small case is strong, or to state it differently, the credibility of the experience of the small case is low. As the years go by, however, the averaging grows weaker, and progressively greater recognition is given to the experience of the particular contract.

At the end of the contract year, the insurance company calculates the present value of the benefits that are payable under the annuities that have been purchased and are still in force. The minimum basis for this valuation may be specified in the contract, but the actual valuation may be more stringent than the minimum. Nevertheless, whatever basis is used is normally applied to all group annuity contracts, regardless of when they were issued. For the purposes of the valuation, the unpurchased portion of past service credits is not considered to be a contract liability.

The difference between the cash balance in the account and the contractual liabilities, as revealed by the periodic valuation, reflects the gain or loss under the contract. After appropriate amounts have been allocated to the contingency reserve, and, in some companies, to the reserve for future expenses, the gain, if any, may be returned to the employer in the form of a dividend or rate reduction. The company is under no contractual obligation to pay a dividend, if earned, and the employer has no legal right to demand an accounting.

As a matter of fact, few companies have been in a position to pay substantial dividends under group annuity contracts. The group annuity business has developed in a period of significant improvement in mortality and declining investment yields, both of which increase the cost of providing retirement benefits. Many, if not most, of the early contracts were written at rates which subsequent developments have demonstrated to be inadequate. As a result, many companies have had to divert funds which normally would have been available for dividend distribution to the strengthening of the reserve bases of contracts issued in earlier years. With the upturn of investment yields, the completion of reserve strengthening programs, and a general boosting of group annuity rates, the future should offer reasonable prospects for dividends.

D. Modification of the Contract.—The group annuity contract can be modified at any time by the mutual consent of the employer and the insurance company. If a bargaining unit is involved, consent of union representatives may also be required. No modification or change in the contract can alter or affect adversely the amount and terms of payment of any annuities which have already been purchased. Some insurance companies also reserve the right unilaterally to modify any terms of the contract at any time at which the rates may be changed, although certain types of changes may require employee consent in any event. Such modifications would normally be confined to those provisions which would be affected by a change in rates.

E. Cessation of Contributions.—The employer has the right to discontinue premium payments under the group annuity contract at any time. Discontinuance can be effected by a mere notice to the insurance company or by failure to pay a premium when due. The insurance company, on the other hand, can discontinue the contract only under the following conditions: (1) failure of the employer to pay premiums within the grace period; (2) reduction in number of employees covered under the contract below a specified number, such as 25 or 50, or, in the case of contributory plans, below 75 per cent of those employees eligible for coverage; (3) failure of the employer to consent to a new set of rates and conditions which the insurance company may promulgate under the terms of the contract.

Under the procedure of most companies, if a contract is discontinued, the annuities which have already been purchased automatically vest in the employees, except that if all past service benefits have not been purchased, any employer credits that might arise on termination of employment are applied to the purchase, under a prescribed procedure, of past service annuities for the employees remaining in the service of the employer. The contracts of some companies, however, state that vesting will not occur if the plan continues with another insurance company or trustee.

Most group annuity contracts contain a provision which permits reinstatement of the contract if application is made within a specified time, usually one year, after discontinuance. Some contracts go further and permit temporary suspensions of payments by mutual agreement between the employer and the insurance company, or even at the option of the employer. Under a Treasury ruling, employer contributions can be suspended only if the benefits to be paid under the contract are not affected at any time by the suspension and the unfunded past service does not exceed the initial past service liability.[29] In other words, any contributions or premiums which are suspended must be paid later. The significance of the requirement relating to the unfunded past service liability will be clear after the discussion of funding methods in the next chapter.

Strictly speaking, a group annuity contract is not terminated until the insurance company has fulfilled all its obligations under the contract. Therefore, in the usual circumstances, a group annuity contract will not be terminated until many years after discontinuance of premium payments. If a situation arises, however, under which there is no party to carry out the duties of the employer under the contract, the contract may be terminated, and thereafter the insurance company's obligations for the benefits purchased to the date of termination will be to the covered employees directly.

Deposit Administration Plan.—Deposit administration is a form of group annuity contract under which the contributions or premiums

[29] P.S. No. 57, August 5, 1946.

are not applied to the purchase of annuities for individual employees until date of retirement or, in some plans, until the vesting requirements have been met. While the contract has been used on a limited scale for the last quarter-century, it has achieved new popularity in recent years as the insurance company's answer to the self-administered trusteed plan. It permits much greater flexibility in plan provisions than the rigid deferred group annuity, and the employer enjoys somewhat greater control over his contributions. It is usually confined to groups of 200 or more, although a few companies will write it on a group as small as 10. It has been widely used to underwrite negotiated pension plans which typically require a fairly high degree of flexibility.

A. Basic Features.—Under the deposit administration group annuity plan, all employer contributions are paid into an undivided fund which is variously described as the "deposit fund," "active life fund," or "deposit account." The monies paid in are commingled with the general assets of the insurance company, and the fund exists only as a bookkeeping account, based, however, on the contract guarantees. The fund is credited with a guarantee rate of interest specified in the contract. An immediate annuity in the appropriate amount is purchased for each employee as he reaches retirement, the required single premiums being transferred from the deposit fund. Some deposit administration contracts, however, provide for the purchase of a paid-up deferred annuity for all accrued benefits on the date that the employee satisfies the vesting requirements, with additional single premium deferred annuities being purchased each year thereafter until the employee retires. Another variation provides for the purchase of deferred annuities for future service credits upon completion of the vesting requirements and the purchase of an immediate annuity for past service credits at retirement.

Under contributory plans, annuities may be purchased with employee contributions as they are received, or at the time the vesting requirements are met, or at retirement. If either of the last two methods is used for employee contributions, the same method is normally used for the employer's future service contributions in order to simplify administrative procedure.

B. Benefit Structure.—The deposit administration contract can be used to finance a pension plan whose benefit structure follows the pattern of deferred group annuity contracts, but its real significance lies in its adaptability to plans which require a higher degree of flexibility than that which could be afforded by the deferred group annuity contract.

(1) Retirement Benefits.

(a) Eligibility for Participation.—To cope with the problem of high turnover among young and short-service employees, most insured pension plans provide that no employee may become a member of the plan until he has attained a specified age or performed a minimum period of service, or satisfied both conditions. This problem does not exist in noncontributory deposit administration plans, since no funds are allocated to individual employees prior to retirement or the completion of vesting requirements. No individual accounts are established, and, consequently, no annuities have to be cancelled when an employee withdraws from employment. Contributions can be discounted for expected turnover through the use of a turnover table or through a fixed policy of not contributing for short-service employees. For this reason it is possible to dispense with the conventional eligibility requirements in pension plans underwritten by a deposit administration contract. This may be an important advantage from the standpoint of employee relations.

Under contributory plans this flexibility is sacrificed when employer contributions are applied immediately to the purchase of deferred annuities.

(b) Benefit Formula.—The deposit administration contract may be readily used with any type of benefit formula, and need not be restricted to a plan which provides a unit of benefit for each year of service. It can be easily adapted to a final salary type of plan, since the annuity is normally not purchased until the employee has reached retirement and his benefit is definitely ascertainable. Social Security benefits may be included directly in the benefit formula, which creates serious administrative difficulties in the case of deferred group annuities. Early retirement benefits need not be limited to the actuarial equivalent of the benefits accrued up to the time of early retirement. Similarly, minimum benefits may be determined independently of the basic benefit formula.

(c) Retirement Age.—The deposit administration contract lends itself to a variable retirement age, whereas other types of insured plans are dependent on a fixed retirement age. Contributions can be based on an assumed distribution of retirements which, of course, should bear a reasonable relationship to past experience. It might be assumed, for example, that 5 per cent of the employees will retire at each age from 60 through 64, 40 per cent at age 65, 5 per cent at each age from 66 through 69, and 20 per cent at age 70. Annuities in the appropriate amounts are then purchased for the employees on the date of actual retirement.

(d) Annuity Forms.—In common with all other plans, the deposit administration contract assumes that the retirement benefits will be paid in accordance with a specific annuity form. The form specified is usually the life annuity with no guaranteed payments. Optional annuity forms are ordinarily made available except in plans which require an adjustment in the amount of an employee's annuity payments in the event there should be a change in his Social Security benefits after retirement. In that case, the benefits must be paid under a life annuity with no guaranteed instalments. The rules governing the election of an optional form are, in general, the same as those pertaining to deferred group annuity contracts.

(2) Withdrawal Benefits.—In contributory plans, the withdrawing employee is entitled to a return of his contributions, with or without interest. If individual deferred annuities have been purchased with employee contributions as they were received, with the resultant administrative expense, the insurance company will assess a 4 per cent surrender charge against the employee withdrawal value. The charge will be deducted from the deposit fund, however, and the employee will receive the full withdrawal value. No surrender charge is levied when the withdrawal does not involve cancellation of annuities.

(3) Death Benefits.—Death benefits are available on the same basis as under a deferred group annuity contract. Employee contributions are refunded, with or without interest, while employer contributions, not having been allocated to any particular individual, remain in the fund to provide benefits for employees who survive to retirement.

(4) Disability Benefits.—Disability benefits can be provided more readily under a deposit administration plan than under a deferred group annuity contract. If the plan promises disability benefits, the customary procedure is for the employer to make payments prior to the normal retirement age on a pay-as-you-go basis. At the normal retirement age, an immediate annuity for the benefits accrued up to the date of disability is purchased for the disabled employee by a withdrawal from the deposit fund as for any other employee. If the number of cases justifies it, some insurance companies will make the disability payments directly from the deposit fund. Under such an arrangement, the employer usually makes actuarially calculated contributions to the deposit fund for the payment of disability benefits.

Another manner in which disability benefits are sometimes provided is through the purchase of a temporary annuity running from date of disability to the normal retirement date or date of recovery, whichever is earlier. In the event that the employee recovers before normal retirement age, the value of the temporary annuity at date of recovery is credited to the deposit fund. If the disability continues to the normal retirement age, an immediate annuity is purchased for the employee from the deposit fund.

C. Premiums and Rates.

(1) Rate Factors.—Strictly speaking, the only premiums involved in a deposit administration contract are those applicable to the immediate annuities purchased at retirement. After the initial guarantee has expired, the premium rates charged for immediate annuities under a deposit administration contract are usually on the same basis as those charged for deferred group annuity contracts. The annuities are purchased on a gross single premium basis, which means that the premium contains an allowance for expenses. The loading is usually the same as that in a deferred group annuity premium—5 to 8 per cent.

Contributions to the deposit fund bear no fixed relationship to the premiums charged for the immediate annuities. The only requirement is that the contributions in the aggregate be sufficient to purchase an immediate annuity in the appropriate amount for each employee as he reaches retirement. The assumptions underlying the contributions need not be the same as those used in the calculation of insurance company premiums. It is feasible to assume rates of mortality that reflect actual experience more accurately than the rates assumed in premium calculations. The contributions can be discounted at a rate of interest approximately equivalent to that which the insurance company is actually crediting to group annuity funds for dividend purposes. Expense assumptions that reflect probable expenses under the particular contract can be used in lieu of the standard loading factor. Finally, allowance may be made for turnover, disability, early and delayed retirements, and salary changes. The calculations may be made by the insurance company or by an independent actuary retained by the employer.

Contributions are not made according to a fixed schedule set forth in the contract. They are initially based on estimated cost assumptions and thereafter are adjusted in accordance with actual experience. If experience under the contract indicates that the deposit fund is being built up at too slow a rate, the employer, as a matter of prudence, should step up his rate of contribution. If the experience is more favorable than the underlying assumptions, the rate of funding can be reduced and any excess funds applied against future contributions. The contract may specify maximum and minimum amounts which the employer may contribute in any contract year, or the amount of contribution may be determined by mutual agreement from year to year; but the employer, not the insurance company, is wholly responsible for the adequacy of the deposit fund.

(2) Rate Guarantees.—Every dollar paid to an insurance company under a deposit administration contract is given a permanent guarantee as to the rate of interest which will be credited to it annually and the schedule of annuity rates that will be applied to it. That is, the minimum rate of interest and the rate schedules that are in effect at the time a dollar is received apply to that dollar regardless of the time it is used to purchase an annuity.

Early deposit administration contracts guaranteed that the original set of annuity rates and the minimum rate of interest would apply to all contributions used to purchase annuities for employees covered under the contract during the first five years of its existence. Contracts issued currently, however, follow the pattern of the deferred group annuity contract and guarantee the initial annuity and interest rates only for contributions paid during the first five years of the contract. Thereafter, the guarantee runs from year to year.

In order to assure contributing employees the full protection of the guarantee, employee contributions are permanently allocated to the employees by whom they were made, either by the purchase of a single premium deferred annuity or by an earmarking process. With respect to employer contributions, however, the guarantee operates on the first-in, first-out principle. In other words, the contributions, with accumulated interest, are applied to the purchase of annuities in the order in which they were received by the insurance company.

D. Employer Credits.

(1) Withdrawal Credits.—Since employer contributions are never allocated to a specific individual prior to vesting or retirement, no employer credits would arise on termination of employment. Turnover is normally estimated, however, in determining the employer's contributions to the deposit fund, so, in effect, credit for withdrawals is taken in advance.

(2) Deferred Retirement Credits.—Under noncontributory deposit administration contracts, there are normally no employer credits for delayed retirement in the conventional sense, inasmuch as the annuity is not purchased until the employee retires. As was indicated earlier, however, employer contributions may be reduced initially in anticipation of a certain percentage of delayed retirements. Under contributory plans, and noncontributory plans which provide for purchase of annuities at point of vesting, the employer may receive credits for delayed retirements.

(3) Dividends or Premium Rate Adjustments.—The deposit administration contract provides for the payment of dividends, which are calculated in substantially the same manner as those under a deferred group annuity contract. Dividends are payable only with respect to those elements of cost which are guaranteed, i.e., interest on the deposit fund and purchased annuities, mortality among retired employees, and expenses for both active and retired employees. Variation of actual from assumed experience with respect to the nonguaranteed elements of cost, such as turnover, mortality among active employees, and rate of retirement, is reflected directly in adjustments to employer contributions. As a matter of fact, excess

interest may be credited directly to the deposit fund rather than through the dividend formula.

E. Discontinuance of the Contract.—The discontinuance of a deposit administration contract does not affect the annuities which have already been purchased. A definite procedure must be set forth, however, as to the disposition of the deposit fund. Any employee contributions in the fund are returned to the employees, either in cash or in the form of paid-up annuities. Employer funds can be disposed of in accordance with one of two basic methods. The first is to continue the operation of the plan until the deposit fund is liquidated. That method obviously provides full benefits for accrued credits for the employees nearest retirement and no benefits for some employees. The other general procedure is to apply the fund immediately to the purchase of deferred annuities on a pro rata basis. Some plans specify that the deposit fund is first to be applied to the purchase of all future service benefits, if possible, the balance being used to purchase a pro rata portion of the past service benefits for each employee. If the fund is not adequate to purchase all future service benefits credited to date of discontinuance, only a pro rata portion of the future service benefits is purchased. Other plans provide for the purchase of a pro rata portion of the future and past service benefits combined.

Many deposit administration contracts permit the deposit fund to be "cashed out" under certain circumstances.[30] It may be that the plan has become overfunded as a result of a change in the benefit formula or as a result of an increase in Social Security benefits which have been integrated in the benefit formula;[31] or the plan may be transferred to another agency, either at the request of the insurance company or on the petition of the employer. Under negotiated plans, it is common for the insurance company to reserve the right to discontinue the contract and transfer the deposit fund to another agency if the plan should subsequently be amended in such a manner as to render it impracticable to provide the benefits under a

[30] See D. C. Bronson, *et al.*, "Discussion of Pensions," *Transactions of the Society of Actuaries*, Vol. II, 1950, pp. 476-484.

[31] The insurance company might prefer to return the excess funds to the employer rather than credit them against future contributions, inasmuch as the funds would enjoy the protection of a rate guarantee which the insurance company might not want to perpetuate.

deposit administration contract. Some contracts make no reference to a transfer of funds to another agency but, if the occasion should arise, a transfer can be worked out on a negotiated basis.

A 5 per cent liquidation charge is levied against the cashing out or transfer of the deposit fund. This charge is intended to cover not only the expenses incident to the liquidation and disbursement of money from the deposit fund but also all expenses, including commissions and premium taxes, which have been incurred on amounts paid into the fund. A portion of the charge is intended to reimburse the insurance company for the loss which it would sustain if the withdrawal should come at a time when the yield on its portfolio is less than that which can be obtained on new investments. Such a loss could be brought about through the forced sale of investments at less than their book value or, if the withdrawal were met by the use of premium income, through a reduction in the funds available for investment at the higher yields. In addition to the liquidation charge, the company usually reserves the right to pay the funds out over a ten-year period, with guaranteed interest, although the right may not be exercised.

Immediate Participation Guarantee Contract.—The immediate participation guarantee contract is a form of group annuity which has been developed within the last few years for the sole purpose of meeting the competition of the self-administered trusteed plan. It represents an attempt to combine in one contract the flexibility of the self-administered plan and the security of the insured plan. As might be expected, each of these attributes had to be compromised to some extent in the final product.

As has been indicated, the deposit administration contract permits almost complete flexibility in the coverage and benefit features of a pension plan; the only area in which more flexibility might be afforded is that of financing. While the cost of a pension plan underwritten by either a deferred group annuity or a deposit administration contract will, in the long run, be determined solely by its own experience, the insurance company, as a hedge against the guarantees provided under the contract, builds up a contingency fund from employer contributions which it administers free of employer control. Moreover, any savings that accrue from experience more favorable than was assumed with respect to the basic cost factors are credited to the employer only through the operation of the dividend formula, which is also under the exclusive jurisdiction of the insurance company. Many employers whose employee groups are large enough to experience average results relative to the basic cost factors would like to avail themselves of the insurance company's investment facilities and rate guarantees but object to the maintenance of a contingency reserve by the insurance company and, to a lesser extent, the insurance company's discretion as to dividends. Such employers would prefer to retain in their business the funds which the insurance company would place in the contingency reserve and offset any adverse fluctuations through future contributions.[32] It is toward this group of employers that the IPG contract is directed.

The IPG contract is still in the formative stage and is not written by all companies. It is normally restricted to employee groups of 2,000 or more, but at least one company will write it on much smaller groups. It is generally written on a noncontributory basis, although some companies will accept employee contributions.

In its structure, the IPG contract is merely an extension of the deposit administration contract and in the following sections only its distinctive features will be discussed. Immediate Participation Guarantee.

A. Basic Features.—As under the deposit administration plan, a fund is established for each contract into which all employer contributions are deposited. The fund is credited annually with the net rate of interest earned by the insurance company on its total investment portfolio, adjusted for capital gains and losses. The fund is charged directly with all insurance company expenses allocable to the contract in accordance with established cost accounting techniques. Under some plans all benefit payments, including retirement benefits, are charged directly to the fund. Under other plans the fund is debited, as each employee reaches retirement, with the gross single premium needed to purchase the retirement benefits due the

[32] It has been argued that contingency reserves are not as vital in the field of pensions as in life insurance, since no one grows old suddenly. Since contingency reserves in connection with retirement plans are for the purpose of meeting adverse experience that develops over a long period of time, the argument goes, the contingency fund could be dispensed with and the increased cost shifted to the employer on a current basis. This argument overlooks the fact that a substantial portion of the contingency reserve is for the purpose of protecting the company against capital losses.

employee. Under this arrangement, all annuities are cancelled, for accounting purposes, at the end of each contract year, and all sums not paid out as benefits during the year are returned to the fund, with interest equal to the net rate earned by the insurance company. At the beginning of the next contract year, new annuities are purchased for each retired employee still living, the premium being based on the attained age of the employee but on rates in effect at the time of his retirement. Irrespective of the procedure used to record benefit payments, the fund is automatically credited each year with any savings resulting from a higher death rate among the retired employees than that anticipated. In fact, the fund participates immediately in all savings arising out of more favorable experience than was anticipated, which, under a deposit administration contract, is true only of the unallocated fund and even then excess interest is sometimes credited only through the dividend formula. Moreover, except as noted below, no contingency reserve is maintained by the insurance company.

One of the few underwriting restrictions imposed by the insurance company—but a crucial one, nevertheless—requires the employer to maintain the fund at a level sufficient to provide full benefits to all employees who have retired. To implement this requirement, the insurance company sets up a reserve equal to the present value of all benefits payable to retired employees, calculated on the basis of the rate schedule in effect at the time the employees retired. The valuation is on a gross premium basis in order to assure that the annuities will be self-sustaining in the event that the contract should be discontinued. In this case, as with all group annuities, the loading would not only take care of expenses but would provide a margin for contingencies. Furthermore, the contract provides that if the fund should ever shrink to the point where it is just equal to the amount needed to provide benefits to retired employees, annuities will be purchased for such retired employees and the contract will revert to a conventional deferred group annuity contract. Thus, the retired employees have the insurance company's guarantee that they will receive the benefits to which they are entitled. The active employees have no such guarantee and occupy essentially the same position as active employees under the deposit administration contract.

B. Premiums and Rates.—The employer is granted wide latitude in making contributions to the IPG fund. The insurance company fixes a lower and upper limit to the annual contributions, but within those limits the employer can adapt his deposits to his financial circumstances and his estimate of future costs of the plan. The employer normally retains an actuarial consultant who determines the rate of funding on the basis of his judgment as to future mortality, interest earnings, expenses, turnover, rate of retirement, and other pertinent factors. Any deviations from the projected experience of the plan are reflected immediately in the condition of the fund. The employer, of course, is solely responsible for the adequacy of the fund and must make good any deficiency that might arise.

In general, annuities are "purchased" at whatever rates are in effect at the time the employe retires.[33] Some contracts, however, provide that all monies, with accumulated interest, deposited during the first five years of the contract shall be applied to the purchase of annuities at rates guaranteed in the contract. Year-to-year guarantees apply thereafter. One large company guarantees an initial schedule of rates for all annuities provided from the fund during the first ten contract years. This is quite different, obviously, from a guarantee that all monies deposited during the first ten years will be applied in accordance with a particular rate schedule.

Contrary to the practice under deposit administration plans, no minimum rate of interest is guaranteed on the IPG fund. It is credited with the actual rate earned by the insurance company.[34] Neither is the fund guaranteed against investment losses; it is charged with its pro rata share of capital losses and credited with its share of capital gains.

C. Discontinuance.—All IPG contracts provide for the automatic discontinuance of the plan when the fund falls to that level which the insurance company has actuarially determined to be necessary to provide benefits to all employees who have retired.

[33] Annuities are not actually purchased under the IPG plan, but the same effect is obtained through the valuation of reserves on the basis of the rates in effect at the time the employee retires.

[34] Some companies credit the fund with 1/40 per cent less than the earned rate in order to accumulate a small contingency reserve.

The contract thereupon ceases to provide for automatic adjustments to reflect actual experience under the plan and becomes, in effect, a closed annuity contract, participating as to dividends in the regular manner. The active employees would receive no part of the fund, and the future financing of their retirement credits would be a matter for the employer to resolve.

The employer, however, has the right under the contract to discontinue his contributions at any time. In such event, the plan might operate in the normal manner until the unapplied funds are exhausted, at which time it would become a closed annuity contract. An alternative procedure would be to apply the unallocated balance in the fund to the purchase, on some equitable basis, of deferred annuities for the active employees.

Some companies permit the employer, as a matter of contract, to transfer the IPG fund to another funding agency. Such a transfer would be subject to a surrender charge and possible restrictions on the rate at which the money could be withdrawn. Other companies will not guarantee the right of transfer but are willing to negotiate a transfer if the circumstances should justify it.

SELF-ADMINISTERED TRUSTEED PLAN

A self-administered trusteed plan is an arrangement under which contributions to provide pension benefits are deposited with a trustee, normally a trust company, who invests the money, accumulates the earnings, and pays benefits directly to eligible employees. The plan is to be distinguished from the type of self-administered plan which operates on the pay-as-you-go basis, without the services of a trust company. The self-administered trusteed plan is extensively used to underwrite the benefits of negotiated pension plans, although it is by no means restricted to that type of plan. Contributory as well as noncontributory plans are written on this basis.

The trust indenture is the formal document under which the plan operates. This is a written agreement between the employer and the trustee setting forth the terms under which the trust fund will be created and administered. The indenture must either include all the terms and conditions of the pension plan or incorporate it by reference, since the benefit payments are made from the trust fund in accordance with the provisions of the plan. The assets of the trust fund are not commingled with other assets of the trust company.

Benefit Structure

Retirement Benefits.—The self-administered plan, like the deposit administration group annuity, lends itself to any type of benefit formula. The plan may provide a unit of benefit for each year of service, expressed as a percentage of earnings or as a fixed dollar amount; or it may provide a flat benefit, unrelated to either earnings or service. A fairly common procedure is to express the benefit as a fraction, such as 1/60 or 1/70, of the final average earnings for each year of service. Formulas which provide for direct offsetting of Social Security benefits, disability benefits, variable retirement ages, and other such features, can be underwritten with no difficulty. The reason for this, of course, is that the benefits are paid by the employer—through the medium of the trust—and it is not essential that the cost of such benefits be determined as precisely as would be required if they were being purchased from a third party, i.e., an insurance company.

If the plan is contributory, employee contributions are frequently administered on a money-purchase basis. For accounting purposes, an individual account is established for each employee. The account is credited with the employee's contributions, plus a rate of interest equal to the average rate earned on the entire fund. At retirement, the balance in the employee's account is used to provide an annuity on an actuarial basis established for that purpose.

The plan may provide for a normal retirement age, or it may permit an employee who has satisfied the minimum service requirements to retire at any age within a specified range of ages. In the latter case, assumptions would have to be made, for funding purposes, as to the number of employees who will retire at the different ages within the permissible range.

The normal form of annuity used under a self-administered plan is the straight life annuity which, it will be recalled, makes no provision for a refund at the time of the employee's death. Most plans, however, provide the same optional forms of annuity as are available under insured plans, particularly the joint and survivorship annuity. Practice varies as to whether optional forms of annuities must be elected a specified time prior to retirement or else supported by evidence of insurability. When such a requirement is not invoked, the trust fund is exposed to adverse selection.

Some plans provide that the trustee shall purchase an immediate annuity of the appropriate amount for each employee as he reaches retirement. Such an arrangement is sometimes called *terminal reinsurance*. The purpose of this procedure may be twofold. As an administrative matter, it may be more economical for the insurance company to send out the pension checks than for the employer or trustee to do so. More important, however, particularly when the number of pensioners is small, is the fact that the employer avoids the hazards and uncertainties of providing lifetime benefits to his employees out of his own funds. Under such a procedure, the annuities are purchased at current rates.

Withdrawal Benefits.—On termination of employment, the employee will receive a return of his contributions, with or without interest. Vesting of employer contributions in the event of withdrawal is far less common among self-administered plans than among insured plans. This is partly due to the lack of adequate facilities for keeping track of persons with vested benefits.

Death Benefits.—Death benefits after retirement are a function of the annuity form under which the retirement benefits are paid. Death benefits before retirement depend upon the provisions of the plan. If the plan is contributory, there will always be a death benefit equal to the total accumulations in the employee's account at the time of his death. Employer contributions, however, rarely vest at the employee's death. Self-administered plans resemble deferred group annuity plans in that no death benefits, other than return of the employee's contributions, are generally made available as an integral part of the plan, such benefits being provided, if at all, in the form of a separate group life insurance plan.

Nevertheless, if the employer should so desire, death benefits in any amounts can be provided directly from the trust fund. This involves an element of risk, however, that is not present in the underwriting of retirement benefits. Abnormally heavy mortality may be experienced during a short period of time, creating a serious drain on the fund, whereas any adverse mortality among annuitants is, by the very nature of the arrangement, spread over a long period of time. This risk is lessened as the size of the employee group increases. Furthermore, the loss occasioned by heavy mortality is offset to a substantial extent by the release of funds that were being accumulated for the payment of retirement benefits, particularly at the higher ages where the heavier mortality generally occurs.

Disability Benefits.—Disability benefits, other than those inherent in early retirement provisions, are generally not provided under self-administered plans, with the exception of negotiated plans which frequently include a special disability benefit. Employer attitudes toward disability benefits are undoubtedly influenced by the generally unfavorable experience of insurance companies with *personal* disability income coverage. There is general agreement, however, that an employer, because of his peculiar relationship to his employees, is in a position to administer a disability benefit more effectively than an insurance company.[35] Neverthelesss, most employers have shown little disposition to offer direct disability benefits under self-administered plans.

Premiums and Rates

The self-administered plan is a form of self-insurance, with a trustee providing investment services and performing such administrative functions as may be agreed upon between the employee and the trustee. There are no premiums in the conventional sense, only deposits with the trustee. The magnitude of the deposits is determined by a consulting actuary who is retained and paid by the employer.

In general, the contributions to the trust fund are based on the consulting actuary's estimate as to the "most probable" cost of the pension plan. Whereas insurance company actuaries utilize assumptions that contain recognized margins of safety, the consulting actu-

[35] It should be observed that an eminent actuary, with wide experience in the field of group annuities, has stated that under an insured plan employers view the disability provision as a means of ridding themselves of inefficient employees who are not old enough to retire and yet are not permanently and totally disabled in the medical sense. R. A. Hohaus, "Further Remarks on Group Annuities", *Record of the American Institute of Actuaries,* Vol. XXIII, 1934, p. 338. The employers might be expected to take another view of the provision if they must pay the benefits directly.

ary uses assumptions with much smaller margins or, in some cases, no margins, in order to keep the employer's initial outlay for pensions as low as possible.

Employer contributions are almost invariably discounted for anticipated mortality, disability, and turnover. This is accomplished through the use of a so-called "Experience Table," which reflects not only the death rate for each age represented in the eligible group of employees but also the disability and turnover rates.[36] These three sets of rates are applied to a hypothetical group of employees coming under the plan at the youngest permissible age in order to forecast the number of such employees who will remain with the employer until retirement. The death and disability rates may be taken from annuity and disability tables developed by life insurance companies, modified by the consulting actuary if desired, but the withdrawal rates should properly reflect the past and prospective experience of the employer involved. The table which reflects the number of employees out of the original group who are assumed to be with the employer at the various possible ages is called a "Service" table. A combination Experience and Service Table which is representative of those used in connection with self-administered plans is presented in Table 5.

It will be noted from the Service Table that at each age the various rates of death, withdrawal, and disability may be combined and applied to the number of employees in that age group in order to determine the attrition for the year. At age 30, for example, the combined rates produce a total decrement of 2,537 employees, withdrawals accounting for all but 37. According to the table, only 1,735 employees out of an original group of 10,000 who began their service at age 30 will remain with the employer until retirement. For each higher age group a larger percentage of the employees will remain with the employer until retirement. It is assumed that no employee over 50 would voluntarily leave the service of the employer.

The application of a table of this nature to an actual group of employees will provide an estimate as to the number of employees to whom retirement benefits will have to be paid. If no other benefits

[36] Some experience tables also contain a column showing the estimated salary progression from age to age. Such a salary scale merely sets forth *average* salaries for each age group and does not purport to reflect the actual salary that a particular employee might receive.

TABLE 5

COMBINED EXPERIENCE AND SERVICE TABLE

Experience Table

Age	*Mortality Rates*[*]	*Withdrawal Rates*	*Disability Rates*[†]
30	.00207	.25	.0016
31	.00221	.17	.0016
32	.00238	.13	.0017
33	.00256	.09	.0018
34	.00276	.07	.0018
35	.00298	.05	.0019
36	.00322	.04	.0020
37	.00347	.04	.0021
38	.00374	.03	.0022
39	.00404	.03	.0023
40	.00436	.03	.0024
41	.00470	.02	.0025
42	.00507	.02	.0026
43	.00547	.02	.0028
44	.00590	.02	.0030
45	.00636	.02	.0031
46	.00686	.01	.0034
47	.00740	.01	.0037
48	.00798	.01	.0040
49	.00861	.01	.0044
50	.00929	.01	.0048
51	.01002		.0052
52	.01081		.0057
53	.01165		.0061
54	.01257		.0068
55	.01355		.0076
56	.01461		.0086
57	.01576		.0098
58	.01699		.0113
59	.01832		.0131
60	.01975		.0152
61	.02130		.0179
62	.02296		.0211
63	.02475		.0253
64	.02668		.0300
65			

[*] This column reflects the rates of the 1937 Standard Annuity Table.

[†] This column is used only if disability benefits are to be provided; otherwise, terminations from disability would be combined with withdrawals.

TABLE 5—Continued

COMBINED EXPERIENCE AND SERVICE TABLE

		Service Table			
Age	*Number Remaining in Service*	*Number With-drawing From Service*	*Number Disabled in Service*	*Number Dying in Service*	*Total Number Terminating Service*
30	10,000	2,500	16	21	2,537
31	7,463	1,269	12	16	1,297
32	6,166	802	10	15	827
33	5,339	480	10	14	504
34	4,835	338	9	13	360
35	4,475	224	9	13	246
36	4,229	169	8	14	191
37	4,038	162	8	14	184
38	3,854	116	9	14	139
39	3,715	111	9	15	135
40	3,580	107	9	16	132
41	3,448	69	9	16	94
42	3,354	67	9	17	93
43	3,261	65	9	18	92
44	3,169	63	10	19	92
45	3,077	61	10	20	91
46	2,986	30	10	20	60
47	2,926	29	11	22	62
48	2,864	29	11	23	63
49	2,801	28	12	24	64
50	2,737	27	13	26	66
51	2,671		14	27	41
52	2,630		15	28	43
53	2,587		16	30	46
54	2,541		17	32	49
55	2,492		19	34	53
56	2,439		21	36	57
57	2,382		23	38	61
58	2,321		26	40	66
59	2,255		30	41	71
60	2,184		33	43	76
61	2,108		38	45	83
62	2,025		43	46	89
63	1,936		49	48	97
64	1,839		55	49	104
65	1,735				

are provided under the plan, this is the only figure that has significance for the employer. By the use of a salary progression table, the dollar value of the benefits to be paid out can be determined. Then the employer can set aside only such sums, improved at an assumed rate of interest, as will be needed to provide the promised benefits.

It can be seen that by this procedure an employer's initial outlay is much smaller than it would be if he assumed that every employee on his payroll at a particular time would, barring death, remain in his service until retirement. This is one of the strong appeals of the self-administered plan. In the long run, of course, the cost would be equalized, since under those plans which do not discount contributions for withdrawals the employer is credited with the sums released as the actual withdrawals occur. Some self-administered plans, however, follow the conventional insurance approach of discounting for only mortality and interest, while it is quite common for contributions under deposit administration and IPG contracts to be discounted for withdrawals and adjusted in accordance with salary progression tables.

The experience under the plan is reviewed periodically, perhaps annually, but no less frequently than every five years, and appropriate adjustments are made in future contributions. The employer assumes the obligation of making up any losses resulting from the cost assumptions used and reaps the advantages of any gains.

There are no guarantees of any sort under the self-administered plan. The trustee agrees only to invest the sums deposited with it in accordance with the trust agreement and applicable statutes, using due care in the process. Neither the principal nor the investment return is guaranteed by the trustee. Nor does the consulting actuary guarantee to indemnify the fund for any losses arising out of erroneous actuarial assumptions. On the other hand, the larger trust companies have investment facilities comparable to those of the largest life insurance companies, and those facilities are equally available to all pension trusts administered by the trust companies. Furthermore, the great majority of actuarial consultants are competent technicians who are presumably making their cost calculations on a reasonably conservative basis.

DISCONTINUANCE

Whenever a self-administered plan is discontinued, the balance in the trust fund can be allocated among active and retired employees in any manner that does not violate the regulations of the Internal Revenue Service. Successive preferential classes of employees similar to those found in insured plans are usually established.

The self-administered plan, however, is faced with a problem in the event of discontinuance that is not present in an insured plan. The fund must be liquidated over a period of time and the latter stages of this process may involve the forced sale of assets and other investment difficulties. Furthermore, the employer must continue to meet the expenses of the plan or else charge them to the fund, thereby diminishing the benefits that can be paid. These problems can be avoided by the purchase of annuities from an insurance company at the time of discontinuance.

COMBINATION PLAN

When it is desired to provide substantial death benefits as an integral part of a pension plan, a combination of insurance and a trust fund may be used. The insurance contracts provide the death benefits and a portion of the principal sum needed to provide the retirement benefits. The additional sums needed to purchase the retirement benefits are accumulated in an auxiliary fund, administered by a trust company under the terms of a trust.[37] The insurance policies contain a provision which permits them to be converted to an annuity contract on or immediately prior to the employee's retirement.

Any type of life insurance contract which provides protection to the time of retirement and accumulates a cash value can be used. As a matter of practice, an ordinary life contract, or a modified version thereof, is usually used. The coverage may be made available through individual contracts, if the number of employees is small, or through a group permanent contract, if the number of employees is large enough to qualify for group coverage.

[37] As was pointed out on p. 78, the additional sums may be accumulated through an auxiliary fund administered by a life insurance company on the deposit administration principle.

TABLE 6

ACCUMULATED VALUES IN AUXILIARY TRUST FUND FOR EACH $10 UNIT OF RETIREMENT INCOME*

Age at Entry	*Annual Contribution*	*Accumulation in Trust at End of Year:* 1	2	3
Males:				
25	$ 10.25	$ 10.25	$ 20.79	$ 31.62
35	17.46	17.46	35.44	53.96
45	34.93	34.93	71.04	108.41
55	100.19	100.19	204.78	314.26
Females:				
25	12.28	12.28	24.92	37.90
35	20.73	20.73	42.08	64.08
45	40.96	40.96	83.29	127.12
55	115.38	115.38	235.81	361.89

BENEFIT STRUCTURE

The benefits under a combination plan are essentially the same as those under an individual contract or group permanent plan. Retirement benefits are payable only in multiples of $10 per month, the payments being guaranteed for ten years. Optional annuity forms are available. Unlike the death benefits under those plans, however, which for a few years prior to retirement may exceed the face of the policy, the death benefits under the combination plan remain equal to the face amount up to the date of conversion. Conversion normally takes place at date of retirement, or, as required by some companies, on the policy anniversary one year prior to retirement.

The termination values under this type of plan are also available on a slightly different basis from those of individual contract and group permanent plans. Depending upon the vesting provisions of the plan, the withdrawal benefits may consist of the cash values of the applicable insurance contracts and a supplemental amount from the auxiliary fund. Employee contributions, if any, are normally applied as premiums on the insurance contracts, with any excess, and the employer's contributions, going into the auxiliary fund. It is not customary for the employer's contributions to vest in the employees.

TABLE 6—Continued

ACCUMULATED VALUES IN AUXILIARY TRUST FUND
FOR EACH $10 UNIT OF RETIREMENT INCOME*

Age at	*Annual*	*Accumulation in Trust at End of Year:*		
Entry	*Contribution*	*5*	*10*	*Age 65*†
Males:				
25	$ 10.25	$ 54.22	$ 116.83	$1,043.79
35	17.46	92.75	201.60	1,103.61
45	34.93	187.39	415.89	1,200.36
55	100.19	550.37	1,283.91	1,365.98
Females:				
25	12.28	64.98	140.00	1,250.82
35	20.73	110.15	239.41	1,310.64
45	40.96	219.71	487.62	1,407.39
55	115.38	633.78	1,478.50	1,573.01

* Payments guaranteed for ten years.

† The sums in this column supplement the cash value at age 65 of a Life Paid-Up at 85 policy, calculated on the basis of the C.S.O. Table and 2½ per cent interest.

PREMIUMS AND RATES

The life insurance policies under this plan are purchased on a level premium basis at the regular rates of the insurance company. The company guarantees the rates only for the policies which have already been purchased. Contracts to be purchased in the future for either old or new employees are subject to the rates in effect at time of purchase.[38]

Rates for the immediate annuities to be purchased at retirement are likewise guaranteed only as to the policies which have been issued. In other words, the guarantee is limited to the number of retirement units represented in the life insurance policies in force. This means, however, that the conversion cost of each insurance policy is guaranteed.

With respect to the auxiliary fund, the insurance company usually furnishes a table of valuation factors which shows the amount which

[38] When the life insurance coverage is provided under group permanent policies, the company may guarantee the rates, including those for immediate annuities at retirement, for coverage effective within the first three to five years after the inauguration of the plan.

should be in the fund at the end of each year for each unit of retirement income. Such a table assumes a certain rate of mortality among the active employees and a certain rate of interest earnings. Although entirely practicable, no allowance is normally made for turnover, credit being taken whenever it occurs. From this valuation table can be determined the aggregate amount which should be in the fund at the end of any particular year. The difference between such sum and the actual balance in the fund is the amount which the employer should contribute in that year if the plan is to remain fully funded. If this procedure is followed, the employer is credited directly and immediately for any gains and charged with any losses relative to the basic assumptions.

This valuation process may be more easily grasped by reference to Table 6, which is an extract from the table of valuation factors used by one of the leading life insurance companies. The table shows the level annual contribution that would be required at the selected ages at entry for each $10 of monthly income at age 65, if the assumed experience under the plan is exactly realized in practice. Automatic adjustments for deviations from assumed experience may be accomplished by the use of the other columns. For example, at the end of three years, the trustee should be holding $53.96 for each $10 of retirement income due a male employee who entered the plan at age 35. If the trustee is actually holding $56.00 at the end of the third year because of turnover, higher interest earnings than assumed, or more deaths than were expected, the employer can contribute $2.04 less the following year. If, however, the trustee is holding a smaller sum than the table prescribes, the employer must make up the deficit, in addition to contributing the regular deposit.

The sum shown under "Age 65" for any age at entry is the amount by which the cash value of each $1,000 of life insurance coverage must be supplemented in order to provide $10 of monthly income at age 65. According to the actuarial assumptions of this particular company, $1,624 must be on hand at age 65 for each $10 unit of monthly life income payable to a male employee, with payments guaranteed for ten years. For a female employee, $1,825 is required because of her longer life expectancy. The cash value per $1,000 of insurance coverage on a male employee who entered the plan at age 35, for example, amounts to $552.53 at age 65. The difference between this sum and $1,624, increased by a 3 per cent conversion charge, equals $1,103.61, the amount in the auxiliary fund. The same procedure applies at all ages.

An employer need not follow the rigid funding pattern prescribed in the table of valuation factors prepared by the insurance company. The table is only a guide, and the employer is free to adopt any funding pattern which suits his circumstances. The insurance company has no responsibility for either the accumulation or the management of the auxiliary fund. The insurance company merely agrees to provide annuities on a stipulated price basis; the employer, with the advice of a consulting actuary, must schedule his contributions in such a manner as to accumulate the necessary funds.