

city Administration, in its request for title III funds, included a sum to be set up as a contingency reserve, subject to control and release by the Budget Bureau, to be used in the event that national work loads exceed those used in the approved appropriation. Although the contingency fund requested for the current period was not approved, efforts to secure approval of the plan are being continued since it would alleviate much of the budgeting problem.

### Granting of Funds

Normally, Federal funds for administration are granted to State agencies each calendar quarter. Occasionally, however, when approval of the appropriation is delayed or a deficiency appropriation is pending or budget submittals or approvals are delayed, it has been necessary to make a 1-month grant as an advance of funds.

Before the grant is made, the Bureau determines whether the State law and its administration meet the requirements of section 303 of the Social Security Act. If there is a serious question regarding conformity, the grant may also be made for only 1 month, by the end of which a determination can be made based on further inquiry and consultation with the State.

The Bureau, upon approval by the Commissioner for Social Security of the amount of funds to be granted to each State agency, prepares a voucher in the approved amount drawn upon the United States Treasury and payable usually to the State treasurer.

### Concluding Remarks

Despite the difficulties inherent in allocating Federal funds on an equitable basis for the proper and efficient administration of 51 State laws that vary widely in a great many details, the Social Security Administration in cooperation with the State agencies themselves has developed methods that are more objective than seemed possible when the program began. Moreover, this cooperative effort is continuing. Although much still remains to be done to make the budgetary process both scientific and flexible enough to meet the needs of the program, there is little question but that Federal responsibility for allocating

the funds necessary for proper and efficient operations that are comparable administration of State un- from State to State in a way that employment insurance systems has never would have been possible if each enabled State agencies throughout State's administrative costs were left the country to maintain administra- to individual State determination.

## Group Annuities Supplementing Retirement Benefits Under Old-Age and Survivors Insurance

By Weltha Van Fenam\*

*The objective of a contributory social insurance program is to underwrite a minimum degree of protection against the common risks that threaten the economic security of wage earners and their families throughout a nation. Once that basic protection is assured, private plans and individual thrift can more surely build up relatively adequate and assured income when wages cease. Experience under the Federal program of old-age and survivors insurance has demonstrated that the program has stimulated rather than hindered the development of private plans that supplement the basic social insurance system.*

GROUP ANNUITY PLANS, discussed in this article, are only one of several types of retirement plans in effect in private industries. In recent years, "trusteed" plans have become very common; these may involve the use of insurance contracts (either group or individual) or establishment of trust funds in which actuarially adequate reserves are accumulated for direct disbursement. Some of the largest groups of industrial employees are now covered by plans administered by the employer and financed through a special liability account. In terms of number of employees protected, the group annuity is the most important of all the various types of insured plans. Nearly 1,800 group annuity contracts were in force in the United States as of December 31, 1946, according to an estimate of the Life Insurance Association of America. These plans covered nearly 1.5 million employees.

\*Office of the Actuary. This article is based on a longer study by the author, *Analysis of Recent Group Annuities Supplementing Retirement Benefits under Old-Age and Survivors Insurance*, Actuarial Study No. 25, February 1948. Copies of the monograph, in limited numbers, are available on request from the Office of the Actuary, Social Security Administration.

The present study is based on an analysis of 376 group annuity plans underwritten by insurance companies between the latter part of 1942 and the end of 1946. The information was derived from booklets furnished by the insurance companies that underwrite the great majority of group annuities in the United States. The booklets were made available on the understanding that they would be used for analytic study and that the industrial organizations would not be identified by name.

### Eligibility

Usually, eligibility to participate is based on a minimum length of service or service and minimum age (table 1). By screening out the casual or short-term employee, the plans eliminate much unproductive recordkeeping. Some plans also relate eligibility to earnings. Such a requirement is usually for purposes of coordinating the plan with Federal old-age and survivors insurance benefits.

Sixty-two percent of the plans (235) required more than 1 year of service (table 2). The most common requirement was 5 years (119 plans) and the next most common, 1 year (114 plans). Thirty-eight percent

Table 1.—*Distribution of group annuity plans by type of eligibility requirements*

Type of requirement	Number	Percentage distribution
Total.....	376	100.0
Service only.....	167	44.4
Service and minimum age <sup>1</sup> .....	115	30.6
Service and upper-limiting age plus either a minimum age or minimum earnings requirement or both.....	63	16.8
Service and salary.....	20	5.3
Salary only.....	5	1.3
Full-time employee only.....	4	1.1
Other.....	2	.5

<sup>1</sup> 8 of these plans also have a minimum earnings requirement, usually \$3,000 a year.

specified a minimum age requirement—30 years, most commonly.

Sixty-three plans set a maximum age limit for entrance other than the normal retirement age that in most plans is the effective maximum. An upper age limit would seem to exclude persons most in need of retirement benefits. The majority of the 63 plans, however, relax these restrictions for older employees already working at the inauguration of the plan or include the statement that such employees will receive benefits under some other arrangement.

In addition to other requirements, 35 plans have an earnings requirement, usually \$3,000 per year. Five other plans condition eligibility on earnings alone. The majority of plans with an earnings requirement cover salaried employees only. There are 54 plans (about 14 percent) limited to salaried employees only, regardless of other conditions for eligibility.

### Normal and Optional Retirement Ages

Most group annuity plans are designed to retire employees at a uniform age, usually 65. If an employee is retired before the normal retirement age specified, the benefits payable at the earlier date are usually the actuarial equivalent of the benefits already purchased and payable at normal retirement. In the present study there are five plans which provide that if he meets certain conditions of age and/or service, an employee who elects to retire before normal retirement age will receive more than the

actuarial equivalent of the benefits that would have been payable at age 65. Retirement later than normal is not mentioned in 20 percent of the descriptive booklets. In the 300 that provide for later retirement, the most usual provision is that the employee may continue to work with the employer's consent, but with benefit payments beginning at the normal retirement date. All the plans provide that contributions of both employer and employee cease at the normal retirement date; one plan, however, allows the participant to elect to continue his own contributions.

Table 3 shows normal retirement ages under the 376 plans crossed with earlier optional retirement ages when such classification is feasible. Eighty-two percent of the plans retire participants at age 65, 15 percent retire men at 65 and women at 60, and the remaining 3 percent retire workers before or after age 65. In this latter group, 6 plans retire both men and women before age 65 and the remaining plans retire men later than 65. When a plan first goes into effect, if many employees are near retirement age, the plan commonly provides that the normal retirement age will be deferred beyond 65 (but usually not later than 70) for present older employees.

Optional retirement before normal retirement age is important in considering the flexibility and generosity of the plans. Only five of the 376 plans do not provide for earlier retirement. The majority condition earlier optional retirement on age alone. The most usual time for earlier retirement, with or without other restrictions, is within 10 years of nor-

mal retirement—found in 83 percent of the plans. Of those with conditions in addition to age, 33 specify a minimum number of years of service with the firm or of participation in the plan; typically, 10 is the number of years specified.

Disability either alone or in combination is a condition in 31 plans (18 of these provisions are classified in table 3, and 13 are in the miscellaneous group). A distinction should be made between earlier retirement for disability and regular disability benefits, such as those payable under many public retirement plans. In the latter case the disabled participant usually receives a larger retirement benefit than the actuarial equivalent of the annuity that would normally commence at 65, since the provision is conceived as insurance against the risk of invalidity. Earlier retirement for disability as permitted in these 31 plans simply makes the retirement age more flexible.

### Retirement Benefit Formulas

The 376 plans are of two main types: the definite-benefit (335) and the money-purchase (41). The method most commonly used for providing benefits under both types consists of the annual purchase of a small paid-up (unit) annuity deferred to retirement date. Under definite-benefit plans the benefit formula is predetermined and the contributions for a given year are the amounts necessary to provide the benefits for that year of service. For example, the annual benefit for a particular year of service might be expressed as 1 percent of annual earnings for that year, the

Table 2.—*Distribution of plans by service and minimum age requirements*

Years of service	Minimum age							
	Total	None	Less than 25	25	30	35	Men 35, women 30	Miscellaneous
Total.....	376	232	7	32	71	27	2	5
None.....	11	10			1			
Less than 1.....	16	11	1		3			1
1.....	114	76	4	6	22	5	1	
2.....	46	33	2	5	5	1		
3.....	62	32		13	13	3		1
4.....	5	2		1	1	1		
5.....	119	65		7	26	17	1	3
Miscellaneous.....	3	3						

<sup>1</sup> Includes 1 specifying age 40 for men, 35 for women; 1 with age 21 for men, and 30 for women; 1 with age 30 for men, and 35 for women; 1, age 28; and 1, age 40 for all employees.

<sup>2</sup> Includes 1 plan requiring 1½ years, 1 requiring 10 years, and 1 with service varying with age.

total benefit at retirement age being the sum of the benefits for all years of participation. The necessary total contribution for a given year depends upon the attained age of the employee. Usually under definite-benefit plans in which the employee and employer share the cost, the employee contributes a fixed percentage of earnings and the employer contributes the balance needed to purchase the deferred annuity representing the benefit for that particular year of service. Thus the employer contribution will increase as the attained age of the employee increases. The money-purchase type provides for a predetermined contribution rate, which is a fixed percentage of earnings. Usually the employee contributes, and the employer's contribution is a like amount or a multiple thereof. The benefit is the annuity that the combined contributions will buy on an actuarial basis. The amount purchasable per dollar of contribution at the younger attained ages will be greater than at the higher attained ages. By and large, for money-purchase plans, the benefit purchased varies by attained age; for definite-benefit plans, the employer's rate of contribution varies by attained age.

Benefits are provided either by joint contributions from employer and employee (contributory plans) or by contributions from employer only (non-contributory plans). Practically all the money-purchase plans and more than half the definite-benefit plans are contributory, as is shown by the following distributions:

Type of plan	Money-purchase plans	Definite-benefit plans	All plans	
			Number	Percentage distribution
Total.....	41	325	376	100
Contributory.....	39	178	217	58
Noncontributory..	2	157	159	42

<sup>1</sup> 15 of these plans are contributory on the higher portion of earnings on which benefits are based and noncontributory as to the lower.

The preceding discussion relates mainly to benefits based on service after the inauguration of the plan. Most plans also provide for benefits based on service before the plan was adopted. The cost of these past-

Table 3.—Number of plans by earlier optional retirement age and other conditions according to normal retirement age

Years before normal retirement, and other conditions (if any)	Normal retirement age				
	Total	60	Men 65, women 60	65	Other
Total.....	376	5	55	1 308	8
5 years.....	3			3	
10 years.....	264	3	44	211	6
15 years.....	2			2	
Number of years not specified.....	25	2	2	21	
10 years, and years of service or participation.....	33		5	27	1
10 years, and disability or hardship.....	10		2	8	
10 years, and years of service or disability.....	8			8	
Miscellaneous.....	26		2	23	1
None.....	5			5	

<sup>1</sup> Includes 28 plans that defer normal retirement age beyond 65 if employee is within 5-10 years of retirement when he joins the plan (this is a permanent feature of these plans).

<sup>2</sup> Most of these have alternative provisions.

service benefits, which are generally based on earnings at the time the plan was inaugurated, is always paid by the employer. Such benefits are usually expressed as definite-benefit annuities for each year of credited past service, even for plans that use the money-purchase method for future-service benefits (only one uses the money-purchase method for past-service benefits).

Since the benefits provided under Federal old-age and survivors insurance are based on the first \$3,000 of annual earnings, many of the group annuity plans, in supplementing these benefits, provide a relatively larger benefit based on annual earnings over \$3,000 than on the first \$3,000 of annual earnings. In studying benefit formulas, therefore, differentiation has been made as between the first \$3,000 of earnings and earnings in excess of \$3,000.

Most of the definite-benefit plans that vary the benefit formula give higher benefits for earnings above \$3,000, although a few vary the formula according to age or time when earned. Among the 335 definite-benefit plans, 150 different benefit formulas are used.<sup>1</sup> The most common, found in 32 plans, provides  $\frac{3}{4}$  of 1 percent of the first \$3,000 of annual earnings and  $1\frac{1}{2}$  percent of annual earnings over \$3,000 for each year of future service and  $\frac{3}{4}$  of 1 percent of annual earnings (both above and below \$3,000) for each year of

credited past service. The following tabulation gives the four most common formulas.

Percent of earnings for each year of—				Number of plans	Percent of 376 plans
Future service		Past service			
First \$3,000	Over \$3,000	First \$3,000	Over \$3,000		
$\frac{3}{4}$ of 1	$1\frac{1}{2}$	$\frac{3}{4}$ of 1	$\frac{3}{4}$ of 1	32	9
1	1	1	1	23	6
1	2	1	1	18	5
1	$1\frac{1}{2}$	1	1	16	4

Considering future service only, the four most common formulas are:

Percent of earnings		Number of plans	Percent of 376 plans
First \$3,000	Over \$3,000		
$\frac{3}{4}$ of 1	$1\frac{1}{2}$	74	20
1	2	43	12
1	1	41	11
1	$1\frac{1}{2}$	30	8

For most employees the larger part of the total future-service benefit is geared to the first \$3,000 of earnings. The most common percentages used are:

Percent of earnings	Number of plans	Percent of 376 plans
1	122	32
$\frac{3}{4}$ of 1	85	23
$\frac{1}{2}$ of 1	11	3
$1\frac{1}{2}$	9	2

In general, past-service benefits are based on the earnings of the year immediately preceding the inauguration of the plan; a few plans use the

<sup>1</sup> A detailed study of the variations in the benefit formulas is presented in the longer monograph. Only the general findings are summarized here.

**Table 4.—Distribution of contributory and noncontributory definite-benefit plans by relative future-service benefit rates for specified earnings groups**

Classification	Number of plans			Percentage distribution		
	Total	Contributory	Noncontributory	Total	Contributory	Noncontributory
Total.....	335	178	157	100	100	100
Uniform for all earnings.....	71	25	46	21	14	29
Plan covers only first \$3,000 or less.....	4	2	2	1	1	1
Plan covers earnings above \$3,000 only.....	31	24	7	9	13	5
Higher on earnings below \$3,000.....	1	1	1	1	1	1
Higher on earnings above \$3,000.....	228	127	101	69	72	64

average of the preceding 5 years. The most commonly used formulas for past service are the following:

Percent of earnings		Number of plans	Percent of plans with past service
First \$3,000	Over \$3,000		
¾ of 1	¾ of 1	86	25
1	1	75	22
½ of 1	½ of 1	29	9
¾ of 1	1	10	3

The past-service benefit formulas are in general less generous, especially with respect to earnings over \$3,000, than those for future-service benefits. There is less differentiation in the future-service and past-service benefit formulas applicable to earnings below \$3,000 than in the formulas for earnings above \$3,000. Among the 376 plans, only 24 percent do not differentiate for future service, while for past service there is no differentiation in 60 percent of the plans that provide for past service. Most commonly the formulas provide the same percentage per year of service for future and past service on earnings up to \$3,000, but give one-half as much for past as for future service on earnings above \$3,000.

There is considerably more uniformity in benefit formulas among noncontributory than among contributory plans (table 4). The five most common benefit formulas (combination of future and past-service unit-benefit rates) account for 36 percent of the noncontributory plans and 19 percent of the contributory.

#### *Limitations in Determining Credited Past Service*

In providing benefits based on service performed before the plan became effective, about 76 percent of the plans exclude some or all past service. Only

38, or 10 percent, exclude all past service. Most of the latter employers either provide benefits outside the group annuity for employees near retirement age when the plan is inaugurated or had a different type of plan before adopting the group annuity and therefore do not need to provide for past service under the new plan. The most usual practice is to exclude approximately the same number of years of past service as is required for eligibility and/or to exclude service before the minimum age for eligibility. Otherwise, new employees would receive benefits on a smaller portion of their actual service than would older employees.

The most common exclusion, in 33 plans, is the first 5 years of past service without reference to the age when service was performed. The most popular combination of age and service exclusions is any service before age 35 and in any event the first 5 years of service; 21 plans specify this combination. When age alone is the basis for exclusion, service before age 35 is most usually omitted (22 plans). Without reference to combinations, age 30 is the most common limiting age (58 plans) and age 35 is a close second (57 plans).

No service is excluded from the calculation of past-service benefits in 76 plans. Eleven not only provide benefits based on all past service but also give annuities based on the past-service formula for the eligibility period for all employees coming under the plan in the future. Most plans, however, give past-service credit only for employees covered on the effective date of the plan. This seems to be one method under contributory plans of encouraging eligible employees to join immediately and of simplifying the process of getting the plan started.

#### *Maximum Benefit Provisions*

Many plans limit benefits either through a maximum annuity provision or through restricting the amount of salary on which contributions and benefits are based. A maximum annuity provision is found in 159 plans (table 5). The \$6,000 annual maximum is by far the most common.

**Table 5.—Number of plans by amount of maximum annual benefit**

Maximum annual benefit	Number of plans
Total.....	159
\$3,000.....	5
4,800.....	6
5,000.....	8
6,000.....	42
7,000.....	10
7,200.....	5
7,500.....	7
8,500.....	9
9,000.....	8
10,000.....	20
12,000.....	8
15,000.....	7
Other.....	24

In the 69 plans that restrict future-service benefits through limitation of the annual salary used in computing the benefit, 37 different maximums are found. The most prevalent is \$10,000 (9 plans); \$15,000 and \$3,000 are each found in 7 plans (table 6).

Among the 19 plans that use both a maximum benefit and a maximum annual salary in determining benefits, no two use the same provisions. The ratio between the two amounts in general averages about 40 percent. As an example, one plan limits the salary used to the first \$15,000 a year and restricts the benefit to a maximum of \$6,000 a year.

**Table 6.—Number of plans by maximum annual credited salary<sup>1</sup>**

Maximum annual credited salary	Number of plans
Total.....	69
Less than \$3,000.....	3
\$3,000.....	7
More than \$3,000 and less than \$6,000.....	7
\$6,000.....	5
More than \$6,000 and less than \$10,000.....	9
\$10,000.....	9
More than \$10,000 and less than \$15,000.....	7
\$15,000.....	7
More than \$15,000 and less than \$30,000.....	8
\$30,000 or more.....	7

<sup>1</sup> Maximum amount used in computation of future-service benefits and of contributions (if any).

### Contributions and Their Relationship to Future-Service Benefits

The most common contribution formula in the 217 contributory plans calls for an employee contribution of 2 percent on the first \$3,000 of annual earnings and 4 percent on earnings above that amount (47 plans). The next most common, found in 16 plans, is 2½ percent and 5 percent, respectively (table 7). The highest employee contribution rate on amounts below \$3,000 is 6 percent in one plan, but in this case the rate is only 4 percent on the first \$600 of earnings.

The same employee contribution rate applies above and below \$3,000 in 37 plans, or 17 percent of the 217 contributory plans. The contribution rate below \$3,000 is half as much as that above \$3,000 in 82 plans. In all, there are 68 different formulas for employee contributions among the plans studied. In contrast, the total number of benefit formulas is 188. This figure includes both definite-benefit and money-purchase plans, although under the latter the future-service benefit cannot be stated directly, being merely a function of the contribution rate.

Costs for all past-service benefits, if past service is included, are paid by the employer under all the plans studied. Under definite-benefit plans, the employer pays the balance of the future-service benefit costs under the contributory plans and, of course, the total cost under the noncontributory.

There appears to be no appreciable difference between employee contribution rates in money-purchase plans and those in definite-benefit plans, although three of the former call for the relatively high employee contribution rate of 5 percent on all earnings. The plan requiring 6 percent (4 percent on amounts below \$600) is not a money-purchase contract. Under definite-benefit plans with a uniform contribution rate on the first \$3,000 of earnings, the average employee contribution rate is 2.4 percent up to \$3,000 and 4.0 percent on such earnings above \$3,000 as are credited. The corresponding contribution rates average 2.7 percent and 4.0 percent, respectively, for the contributory money-purchase plans. The average

employer contribution-rate requirement under the contributory money-purchase plans is 4.2 percent on the first \$3,000 and 5.6 percent on earnings above that amount.

Averaging the contribution rates required under contributory money-purchase plans shows that the employees bear about 40 percent of the cost of future-service benefits based on the first \$3,000 of earnings and 42 percent based on earnings above that amount. In some of the plans the employer pays an additional amount when necessary to provide a stated minimum benefit.

The ratio of employee contribution rates to future-service benefit rates is uniform for all credited earnings in 138 definite-benefit plans. The most prevalent relationship is 2 of employee contribution to 1 of annual benefit, meaning that in 2 years after retirement at normal retirement age the employee will have received in future-service benefits the full amount of his own contributions. Those entitled to past-service benefits will have received such amounts in addition. The tabulation below gives the distribution according to the relationship between employee contribution and future-service benefit per year of membership:

Ratio of employee contribution rate to benefit rate	Number of plans	Percentage distribution
Total.....	138	100
2 times.....	46	33
2½ times.....	33	24
3 times.....	22	16
3½ times.....	20	14
Other.....	17	13

Under these plans, on the average, in 2½ years after retirement the employee will receive (exclusive of past-service benefits) the full return of his contributions.

Employers pay the same proportion of the cost of benefits based on earnings above \$3,000 as on earnings below in 197 plans (53 percent). Under 133 plans, the employer bears relatively more of the cost of benefits based on earnings over \$3,000 than on those below. Under another 43 plans, the employer pays relatively more of the cost of benefits based on the first \$3,000 of earnings than for the excess.

### Cash Payments at Termination of Service or Death

At termination of service before normal retirement age, benefits may be of two types: cash withdrawal payments or deferred annuities available if the employee's contributions (if any) are also applied to such an annuity (see "Vesting" below). Since the primary purpose of the group annuity is to provide retirement benefits, most plans provide only for refund of employee contributions with or without interest upon death or termination of service before retirement. It should be borne in mind, too, that the old-age and survivors insurance program provides monthly benefits for survivors of these employees and that most of the companies included in this study also provide for group life insurance.

### Noncontributory Plans

Only eight of the 159 noncontributory group annuities provide lump-sum cash termination benefits. The most usual payment is the employer's contributions with interest, which, if taken, would eliminate any annuity benefit; the cash option of three of the plans depends on a certain number of years of service. All but 10 of the noncontributory plans provide for vested benefits in the form of deferred or immediate annuities for employees meeting certain eligibility requirements—age, service, length of membership, or combinations thereof.

Table 7.—Employee contribution rates

Percent on first \$3,000	Percent on excess over \$3,000		Number of plans	Percentage distribution of 217 plans
	Varies from—	Most prevalent		
Total.....			217	100.0
None....	1 to 5¼.....	5 (13 plans) <sup>1</sup> .....	26	12.0
1.....	0 to 3½ <sup>2</sup> .....	1 (4 plans).....	8	3.7
1½.....	1½ to 4½.....	3 (5 plans).....	8	3.7
2.....	0 to 5 <sup>3</sup> .....	4 (47 plans).....	69	31.8
2½.....	0 to 5½ <sup>3</sup> .....	4½ (5 plans).....	9	4.1
2½.....	2½ to 5.....	5 (16 plans).....	19	8.8
3.....	3 to 6.....	5 (7 plans).....	26	12.0
4.....	4.....	4 (5 plans).....	5	2.3
Above 4.....	0 to 6 <sup>3</sup> .....	5 (3 plans).....	7	3.2
Other....			40	18.4

<sup>1</sup> 3 plans provide for noncontributory benefits based on earnings below \$3,000.

<sup>2</sup> 5 plans provide for noncontributory benefits based on earnings below \$3,000.

<sup>3</sup> 1 plan provides for benefits based on first \$3,000 of earnings only.

Provisions for death benefits are similar to the termination-of-service benefits, except that a larger number of plans provide a death benefit. In addition to the eight plans noted above, eight others provide for a cash payment of the employer's total contributions with interest if death occurs before retirement. If the employee dies after he has retired, there is generally no death benefit except when an optional form of annuity has been elected. Five of the plans have as the automatic retirement benefit a life annuity guaranteed for either 5 or 10 years; other types of annuity may be elected in lieu thereof.

**Contributory Plans**

Of the 217 contributory plans, 204 provide for a refund of the employee's contribution, with interest, on termination of service before retirement age. The interest rate specified in each of these 204 plans is 2 percent, although this rate may be changed at 5-year intervals but only for contributions made subsequent to the change. The remaining 13 plans refund the employee's contributions, but without interest. Eight of the plans provide for additional cash benefits with respect to some or all of the employer's contribution. In general, the employee who is entitled to a cash benefit may elect instead an annuity deferred to normal retirement age based on his own contributions and, if vesting requirements have been met, on the employer's contributions as well.

When the employee dies before retirement, death benefits are usually the same as those payable on termination of service. A few plans that do not give a cash termination benefit with respect to the employer's contributions do provide, when the employee dies before retirement, a cash death benefit equal to a portion, or all, of the employer's contributions in addition to a refund of the employee's contributions with interest. The death benefit after retirement depends on the form of the annuity. The normal retirement benefit is usually a modified cash-refund annuity, with provision for election of other types of equivalent actuarial value. The death benefit under the modified cash-refund annuity is the excess of

the employee's contributions, usually with interest to retirement date, over the total annuity payments made before the employee's death. The few plans that pay a death benefit before retirement of all or part of the employer's accumulated contributions do not, under the normal annuity benefit, provide any death benefit after retirement with respect to the employer's contributions.

Except when an option is chosen, seven of the contributory plans do not provide death benefits after retirement; the normal annuity is similar to an individual life annuity without a guaranteed number of payments and, therefore, relatively larger than the modified cash-refund annuity. Under three other contributory plans the death benefit after retirement is a continuation of the annuity until the end of 10 years after the date of retirement if the individual dies during the 10-year period.

**Vesting**

"Vesting" is a term used to denote the right of the employee who terminates his employment before he is eligible for retirement to a part or all of the benefits already purchased by the employer's contributions made in his behalf. Usually in contributory plans this right is conditioned upon the withdrawing employee's leaving his own accumulated contributions with the insurance company to be applied to the purchase of a deferred annuity. After vesting requirements have been met, he is entitled to a paid-up annuity purchased by his own contributions and by part or all of the employer's contributions. Since there is usually no cash withdrawal privilege in noncontributory plans, the right to receive a benefit based on the employer's contributions is automatic upon fulfilling the specified conditions of vesting. For example, the vesting provision might say, "If, upon termination of employment, the employee has completed 10 or more years of participation in the plan, he will be entitled to receive at retirement age all the annuities purchased for him before leaving the company."

The various forms of vesting are designated here as (1) immediate full vesting, (2) deferred full vesting, and (3) deferred graded vesting. Imme-

mediate full vesting applies to plans in which all annuities purchased vest immediately in the participant. Deferred full vesting means that all annuities purchased for the participant vest when he has satisfied the conditions in the plan. Graded vesting provides that a stated percentage of the annuities purchased will vest in the employee when he has met certain conditions, and as additional conditions are met this percentage will be increased to the full amount. For example, the participant may become entitled to 25 percent of the annuities purchased by the company's contributions after 5 years' service and to 5 percent additional for each subsequent year of service, graduating to complete vesting after 20 years of service.

In all, 349 plans (93 percent) contain some form of vesting of employer's contributions. These plans, classified by the form of vesting provided, are as follows:

Form of vesting	Number of plans
Total.....	349
Deferred full vesting.....	236
Deferred graded vesting.....	82
Immediate full vesting.....	5
Alternative provisions not classified.....	26

The most usual requirement for vesting is years of service (table 8). Service alone is required in 88 plans. Another 128 require service combined with participation in the plan or age or both. The tabulation below shows the years of service required for the 216 plans. In the case of graded vesting plans, the requirement tabulated is the minimum period at which vesting begins.

Years of service	Deferred full vesting plans	Deferred graded vesting plans	Total plans
Total.....	172	44	216
5.....	15	15	30
10.....	61	22	83
15.....	58	2	60
20.....	30	0	30
Other.....	8	5	13

Participation alone (that is, contributions in contributory plans or membership in noncontributory plans) is a condition for vesting in 75 of the plans (20 percent); and participation,

either alone or in combination, is a requirement in 140 plans (37 percent). Five years of participation is the most usual provision in deferred full vesting. When graded vesting is provided, 5 years is also the most usual minimum requirement, with complete vesting in 20 years.

Age is the sole condition of vesting in only seven of the plans (2 percent), but 128 (34 percent) have an age requirement in combination with other conditions. When age and service are combined, the most typical requirement is age 40 with 10 years' service. The most common combination of participation and age is 5 years' participation and age 45.

### Integration With Retirement Benefits Under Old-Age and Survivors Insurance

The benefits under all 376 plans supplement those under the Federal old-age and survivors insurance program. Many of the benefit formulas take into consideration that of the Federal program, which is weighted in favor of employees with low incomes. The Federal formula is based on the first \$3,000 of annual earnings, and that portion of the benefits based on the first \$600 is relatively four times as large as the portion determined on the next \$2,400. In the early years of the

Table 8.—Distribution of plans by type of vesting requirement

Requirement	Number of plans	Percentage distribution	Most usual provision <sup>1</sup>
Total.....	376	100	
Service only.....	88	24	10 years' service.
Participation only.....	75	20	5 years' participation.
Age only.....	7	2	Age 55.
Age and service.....	83	22	Age 40 and 10 years' service.
Age and participation.....	20	5	Age 45 and 5 years' participation.
Participation and service.....	27	7	5 years' participation, 10 years' service.
Age, service, and participation.....	18	5	Age 55, 20 years' service, 5 years' participation.
Alternative requirements.....	26	7	Age 55 or 20 years' service.
Immediate full vesting.....	5	1	All participants.
No vesting.....	27	7	

<sup>1</sup> Years of service include both years of participation and years of service performed before participation.

Federal program, which was enacted in 1935, the formulas used in group annuities sometimes provided relatively large benefits from which Federal benefits were to be deducted to arrive at the net payment from the group annuity. Since under this type of group annuity there was usually no distinction made between earnings classes, the total benefit from both programs, expressed as a percentage of earnings, did not vary in relation to the level of earnings. The nonuniform benefit formulas currently used in many group annuity plans aim at a total benefit that varies less by earnings classes than does the benefit under old-age and survivors insurance.

Employer contributions to private retirement plans that meet certain legal requirements can be deducted from taxable income. The Treasury Department determines whether the particular plan meets the requirements. In general, one of the major conditions is that a plan must not give relatively higher total benefits, including in the computation the retirement benefits under old-age and survivors insurance, to higher-paid than to lower-paid employees. The rules issued by the Department have naturally influenced somewhat the selection of integrating benefit formulas, though similar integrating formulas had been widely adopted before Treasury Department determination was required.

The analysis in table 9 is based on future-service benefit formulas except in the case of the money-purchase plans, for which the contribution formula is used. In these plans the employer's contribution bears a fixed relation to the employee's contribution. It may therefore be assumed that, if the employee contributions are coordinated with old-age and survivors insurance, benefits will be similarly coordinated. About 24 percent of the plans do not provide for direct coordination with old-age and survivors insurance in the future-service benefit formula, although it is probable that some, and perhaps most, would have provided larger benefits if it were not for the social insurance benefits.

The type of integration most frequently used provides relatively larger benefits on earnings in excess of \$3,000. This type is found in 243 or

Table 9.—Number of plans by methods of integrating future-service benefits with old-age and survivors insurance

Classification	Number of plans
Total.....	376
Plans with nonuniform formula.....	283
Changes at \$3,000 earnings only.....	196
Changes below and at \$3,000 earnings.....	130
Changes below \$3,000 earnings only.....	2
Omits first \$3,000 earnings.....	32
Omits first \$600 earnings, changes at \$3,000.....	12
Omits first \$600 earnings, does not change at \$3,000.....	5
Omits first \$1,200 earnings, changes at \$3,000.....	3
Miscellaneous.....	3
No direct allowance for old-age and survivors insurance benefits.....	92
Benefits reduced by old-age and survivors insurance primary benefit.....	1

<sup>1</sup> 2 plans change at \$600 earnings, 12 at \$1,200, 12 at \$1,800, 1 at \$2,400, and 3 at irregular points.  
<sup>2</sup> 1 plan starts at \$1,800 for women.

64 percent of the plans. In addition, 32 plans omit from benefit calculations all earnings below \$3,000, except for one plan that sets the lower limit at \$1,800 for women. In 17 plans, the first \$600 of earnings a year is omitted, in recognition of the greater weight given to that portion in the social insurance formula. Three other plans omit the first \$1,200 of earnings. In 33 plans the benefit rate increases at some point below \$3,000.

The benefit formulas for past service (not shown in the table) are more uniform. Only 71 plans (22 percent) give relatively larger benefits on amounts above \$3,000. Another 30 plans omit earnings below \$3,000, and 20 omit those below \$600 a year. Only one formula changes to a higher benefit rate at a point below \$3,000. The remaining 254 plans either have no direct coordination of past-service benefits with the old-age and survivors insurance benefit formula or do not give benefits for past service.

Another form of integration is achieved by offsetting the amount of the social insurance benefit against the annuities purchased under the plan. Only one of the 376 plans has such a provision, and that plan provides benefits based on the first \$3,000 only. Six other plans include the social insurance primary benefits in setting the amount of maximum or minimum benefit.

One form of coordinating the payment of benefits other than that provided in the formula is called social

security adjustment option. This option is available in 161 plans (43 percent). It provides that, in case of retirement before age 65, benefits may be so adjusted that the employee will receive approximately a level retirement income (including the estimated primary benefit payable under old-age and survivors insurance after age 65) throughout the rest of his life. This adjustment does not increase the cost of benefits, since the normal and the adjusted annuities are of equal actuarial value. Normally, all payments of annuities under the plan would be in equal amounts, but with the social security adjustment option they will be larger than the normal amount before age 65 and smaller after age 65. Three plans provide a temporary supplemental annuity approximately equal to old-age and survivors insurance benefits for women from age 60, their normal retirement age under the plan, to age 65.

### Outstanding Trends

This study is the most detailed analysis of group annuities prepared in the Office of the Actuary, but short summaries of trends in group annuities have been made from time to time. These summaries for the years 1939-42 have been consolidated for comparison with the present study (table 10).

For employee contributions, the

Table 10.—Percent of plans of specified type and with specified provisions, 1939-42 studies and present study

Type of plan and provision	Percent of plans	
	1939-42 studies	Present study
Noncontributory plan.....	5	42
Money-purchase plan.....	33	11
Covering only those earning \$3,000 or more per year.....	13	8
Eligibility requirement of more than 1 year of service.....	18	62
Eligibility requirement of age 30 or above.....	36	27
Eligibility requirement of age 35 or above.....	13	8
Normal retirement age of 65 for men.....	98	97
Sex differential in normal retirement age.....	13	15
Provision for maximum benefit <sup>1</sup> .....	38	44
Provision for vesting.....	92	93
No integration of future-service benefits with old-age and survivors insurance (other than adjusted option only).....	5	24

<sup>1</sup> Either through limitation of total annuity or of earnings used in benefit computation.

most popular formula in the previous studies was the same as in this study—2 percent on the first \$3,000 of earnings and 4 percent on those above \$3,000. For the plans as a whole there was, in the earlier period, a relatively greater differential between the contribution rate on the first \$3,000 and the rate on the excess.

The future-service benefit as related to employees' contributions under definite-benefit contributory

plans indicates more liberality in the plans of the present study. In the plans that are sufficiently uniform for purposes of comparison, the employee contribution will, on the average, have been returned in full in slightly over 2.5 years after retirement; the corresponding figure for an earlier period was 2.8 years. Under the contributory money-purchase plans of the present study the averaged ratio of employer contribution for future service to employee contribution is higher than that shown in previous studies. A higher rate from employer than employee is called for in 62 percent of money-purchase plans, as compared with 16 percent in the earlier period.

Formerly, more plans provided that benefits would be limited or reduced on account of social security payments. Of 190 plans underwritten in the period July 1940-June 1941, 5 percent (nine plans) had an offsetting provision of some kind, whereas in the present study less than 2 percent (seven plans) have such a feature, and only one plan calls for a full offset. The social security adjustment option, which in case of retirement before age 65 has the effect of providing approximately level benefits (including the primary social security benefit), is mentioned in 43 percent of the booklets. Before 1942, few plans provided this option.

(Continued from page 3)

will serve as consultants on the social welfare of United States citizens abroad and of alien dependents of citizens.

### Program of National Assistance in Great Britain

Great Britain completed a sweeping revision of its social security system early in March, when it passed the National Assistance Act. The act, which received the Royal Assent on May 13, formally declares the death of the centuries-old poor law and creates in its place entirely new services

“founded on modern conceptions of social welfare.”

The new legislation provides for comprehensive services falling into two main groups:

1. National assistance, which through a unified national service will provide financial assistance to persons in need whose needs are not otherwise met by national insurance or from any other source. The Central Government is to meet the cost of the program, and the National Assistance Board will make the assistance payments that have previously been made through two agencies—the Assistance Board, which has paid allowances to old-age pensioners,

widows with dependent children, and insurable unemployed persons who are not qualified for unemployment benefits or who receive such benefits but find them insufficient for their needs; and the public assistance committees of local authorities, which have been responsible for all other groups.

2. Residential accommodation for the aged, the infirm, and others who require care and attention of this kind, with special welfare services for certain handicapped persons. The local governments will administer the program, and costs are to be met by local funds, though the Exchequer may provide some help.