ANALYSIS OF RECENT GROUP ANNUITIES SUPPLEMENTING RETIREMENT BENEFITS UNDER OLD-AGE AND SURVIVORS INSURANCE

By

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This study has been prepared for the use of the staff of the Social Security Administration and for limited circulation to other administrative, insurance, and research persons concerned with the subject treated. It has not been submitted to the Commissioner for Social Security for official approval.

FOREWORD

This Actuarial Study, prepared by Mrs. Van Eenam with the valuable assistance of Mrs. Ruth M. Hester, presents an analysis of the benefit and contribution provisions of group annuity contracts written in the past few years and discusses also the general changes which have occurred as compared with such plans written in earlier years.

In considering the general problem of social security it is most important to take into account the supplementation by cooperative group methods between employers and employees to the floor of protection furnished by the old-age and survivors insurance system. It should be recognized that the group annuity is only one of several types of retirement plans used in this field. In recent years trusteed plans have become very common; these may involve the use of insurance contracts (either group or individual) or of a trust fund for the accumulation of actuarially adequate reserves for direct disbursement. Some of the largest employee groups are provided benefits under plans administered by the employer and financed through a special liability account. From the standpoint of number of employees covered, the group annuity is the most important of the insured types. Still another form of protection, namely, that arranged for entirely by the individual, is not within the scope of this report, although it too is a very important element in the national picture of economic security.

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I. INTRODUCTION

Nine leading insurance companies which write group annuities furnished this office with 376 booklets describing group annuity plans of industrial concerns underwritten during the past few years. It was understood that these would be used for analysis purposes and that reference by name to the organizations would not be made. A few of the plans were underwritten in the latter part of 1942, the balance since January 1, 1943.

The plans included in this study comprise approximately 70% of the number of group annuity contracts written in the United States by all insurance companies during the period (including contracts covering employees of nonprofit organizations, none of which is included in this study). The number of employees covered under the plans of this study as of the date they became effective is estimated at about 235,000. As eligibility requirements are met the coverage thereunder will, of course, increase. The total number of group annuity contracts in force in the United States as of December 31, 1946 has been estimated by the Life Insurance Association of America at nearly 1800, with the number of employees covered thereunder being nearly 1,500,000.

The plans have been analyzed with respect to some of the most important provisions. Many details were not analyzed and the actual group contracts probably indicate more detailed provisions than the booklets. A few have somewhat different provisions for employees "not covered" under old-age and survivors insurance than for those "covered." In this study such plans have been analyzed only with respect to the provisions for those so covered.

II. SUMMARY OF MAJOR PROVISIONS OF 376 GROUP ANNUITIES

Of the 376 group annuity plans analyzed in this study, 41 are of the money purchase* and 335 of the definite benefit* type for future service benefits. Of the latter, all except 10 provide benefits on the unit annuity* basis. The employees contribute under 217 of the plans; under the remainder the employer bears the entire cost.

In all except 4 plans there is some eligibility requirement for entrance into the plan. The most common requirement is 5 years of service, closely followed by 1 year of service. The most common minimum age requirement is age 30.

The normal retirement age for men is 65 under 97% of the plans; for women it is age 65 in 83% of the plans. There is a sex differential in normal retirement age in 15% of the plans. The most usual differential is 5 years, with normal retirement for women at age 60 and for men at age 65. In 83% of the plans there is provision for optional retirement within 10 years of normal retirement age, sometimes further contingent upon a given number of years of service and/or participation.

The most usual benefit formula is one which provides for a future service benefit of $\frac{3}{4}$% of the first \$3000 of earnings per year of service and $1\frac{1}{2}$% on earnings in excess of \$3000; for past service $\frac{3}{4}$% of earnings (both below and above \$3000) per year of service. However, this formula is used in only 9% of the plans. In all, there are 192 different benefit formulas used. Considering future benefits only, the most common is again $\frac{3}{4}$% on the first \$3000 of earnings and $1\frac{1}{2}$% on the excess; disregarding the combinations with past service benefits, this formula is found in 20% of the 376 plans. For past service benefits, the most usual formula is $\frac{3}{4}$% of earnings (both below and above) for each year of service. This formula appears in 86 plans or in 23% of all plans. A maximum limitation with respect to either future service or past service benefits, or both, is provided in 56% of the plans. This is accomplished through a straight limitation of the size of the annuity, or through limiting the earnings used in computation of benefits, or both. Past service benefits are provided in 90% of the plans, and in some of the remaining plans the employer provides for past service outside of the group annuity.

The employee contribution rate averaged for the contributory plans is 2.4% of the first \$3000 (for plans providing for no break in rate, or a break at \$3000 only) and 4.0% on earnings in excess of \$3000 for all plans basing some or all contributions on such

* See page 4 and footnote, page 15, for explanation of these terms.

earnings. The most common rate is 2% on the first $3000 of earnings, with 4% on the excess, found in 47 of the 217 contributory plans. Under definite benefit contributory plans the employer pays the balance of the cost of future service benefits. Under contributory money purchase plans the average employer contribution requirement is 4.2% of earnings up to $3000 and 5.6% on the excess. The cost of all past service benefits on both types is borne by the employer.

Death benefits before retirement are generally a return of employees' contributions with interest (about 7% of the contributory plans do not provide for interest). The death benefit after retirement is dependent upon the type of annuity elected. The most usual automatic retirement benefit provides a life annuity with the return at death of the excess, if any, of the employee's accumulated contributions at normal retirement age over the total retirement benefits received.

Upon termination of service before meeting optional retirement age or vesting requirements, the cash benefit is usually a return of contributions, with or without interest. Vesting of part or all of the employer's contributions if certain requirements are met is provided in 93% of the plans. In general this takes the form of an annuity deferred to normal retirement age. The most usual requirement for vesting is 5 years of participation, although 10 years of service is almost as frequent.

Definite recognition of social security benefits is present in about 75% of the plans. The most usual form of integration is one which provides for higher contributions and benefits on the earnings in excess of $3000 than for the first $3000 of annual earnings. In a number of plans the first $600 of annual earnings is disregarded, thereby recognizing that the social security benefit is larger with respect to the first $600 of earnings per year than for earnings from $600 to $3000. Plans covering only those earnings in excess of $3000 account for about 8% of all plans.

While certain provisions are quite common among the plans, when all factors are considered few plans are found to be alike in all major respects.

III. TYPES OF PLANS

With respect to contributions, plans are of 3 types. Under the noncontributory the employer bears the entire cost; under the contributory the cost is shared. There are some plans which give benefits based on all earnings, but calling for contributions on only the higher portion of earnings, classified in this study as "partially contributory," since they are noncontributory for the lower-paid employees and contributory for the higher-paid employees. Of the 376 plans studied, 159 are noncontributory and 15 are partially contributory; the remaining 202 are contributory with respect to all earnings upon which benefits are based. Noncontributory plans account for 42% of the total, as compared with 6% of of the plans in a previous study of 320 group annuities underwritten during the period from July 1939 to July 1942. The reason for this variation seems to be the high wartime taxes both on individuals and corporations. Employee contributions to group annuity plans are not deductible from taxable income, while employer contributions to plans "approved" by the Treasury Department are deductible. With higher corporate taxes, the cost advantages to the employer in having the employees share the cost has been of less weight than in the years during which the plans of the previous study were underwritten. Some authorities feel that there are offsetting advantages in a contributory plan. They maintain that the employee is more likely to understand and appreciate the plan to which he elects to contribute, and that he prefers to help purchase his retirement benefits. The trend since the end of the war has been toward relatively more contributory plans. Of the plans of this study which were underwritten in 1946, 66% were contributory, as contrasted with 56% of the plans underwritten during the war period.

As to benefits, there are two main types of plans. "Definite benefit" plans provide, according to a predetermined formula, for benefits generally related to earnings and varying as earnings change. Most definite benefit plans are of the "unit annuity" type, a term used to indicate that a small paid-up annuity is purchased by each yearly contribution. The employee contribution (if any) is generally a fixed percentage of earnings with the employer paying the balance of the cost to provide the specified benefit. Under the "money purchase" method, the employee usually contributes as above, but the employer contribution is a like amount, or a multiple thereof; the benefit is the annuity which the combined contributions will buy on an actuarial basis. In many cases under both types the benefits thus provided are supplemented by benefits purchased by the employer for the period of service prior to the inauguration of the plan. With respect to these two types of plans, the trend is away from the money purchase type. In the earlier study, it was found that about one-third were money purchase plans. In the present study only 41, or about 11% of the 376 plans, are of this type.

Of the 41 money purchase plans, 38 are contributory for all employees covered; 2 are noncontributory; while under 1 the employee contributes on earnings in excess of $1800, with benefits based upon total earnings, both above and below $1800 per year. Of the 335 definite benefit plans, 157, or about 48%, are noncontributory; 164 are contributory for all employees covered, while 14 are partially contributory There are 24 contributory and 8 noncontributory plans which cover only those with earnings in excess of $3000 (often only salaried employees). These account for 8% of the total, in contrast with 16%, as shown in a previous study of group annuities underwritten between July 1941 and July 1942 and with 12% in the study covering the period 1939-42.

The following table shows the distribution by type of the plans included in this study:

	Money Purchase	Definite Benefit	Total Number	Total %
Contributory	38	164	202	54
Partially contributory	1	14	15	4
Noncontributory	2	157	159	42
Total	41	335	376	100

IV. ELIGIBILITY

It is customary to condition eligibility to participate in the group annuity plan on a minimum amount of service, or the attainment of a certain age, or both. This eliminates unproductive bookkeeping due to employee turnover. In some plans eligibility is also conditioned on earnings. Such a requirement is usually for the purpose of coordinating the plan with Federal old-age and survivors insurance benefits. These coordinating features of the plan will be discussed in Section X.

The different types of requirements used in the 376 plans are set down in Table 1. Four plans place no condition on eligibility except fulltime employment with the company. Table 2 shows the number of plans by service and minimum age requirements either alone or in combination.

A tendency to increase the number of years of service required for eligibility has been noted in previous studies. In plans inaugurated in 1938, 10% required more than 1 year of service; in 1939, 15%; and in July 1941-July 1942, 25%. In this study, 62% of the plans require more than 1 year, 30% require 1 year, and only 8% require less than 1 year, or no service at all. The striking acceleration of the tendency to require more service probably represents one way of dealing with the problem of large numbers of temporary war workers, as well as an effort to confine the pension plan to the persons most interested in its advantages; that is, the older, more stable employees. It will be noted from Table 2 that 5 years is the most common provision (in 31% of the plans), although there are almost as many plans that require only 1 year.

As shown in Table 3, the percent of plans with a minimum age requirement increased slightly over that for the previous study and was much higher than in plans underwritten in 1938. Table 4 gives a comparison of the minimum age requirements for men as tabulated in an earlier study and the present. In both studies age 30 was the most usual requirement, but in the earlier study a smaller percentage had requirements below age 30. Thus while service requirements have increased in length, the minimum age has tended to be lower in recent years. The longer service requirement probably has the indirect effect of raising the average age at entrance into the plan, while not penalizing the younger employee who has been with the company a substantial length of time.

Sixty-three plans have an upper age-limit other than the normal retirement age which otherwise is the effective upper-limiting age for entrance in most plans. The requirement of an upper-limiting age would seem to exclude from the plan persons most in need of

Table 1.—Distribution of plans by types of eligibility requirements

Type of Requirement	Number	Percentage
Service only	167	44.4
Service and minimum age*	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
Total	376	100.0

* Eight of the plans with service and minimum age requirements also have a minimum earnings requirement, usually $3000 per year. The majority of the total of 40 plans requiring minimum earnings for eligibility are plans covering salaried employees only.

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

Years of Service	Minimum age							
	None	Less than 25	25	30	35	Men 35 Women 30	Miscellaneous	Total
None	10	—	—	1	—	—	—	11
Less than 1	11	1	—	3	—	—	1	16
1	76	4	6	22	5	1	—	114
2	33	2	5	5	1	—	—	46
3	32	—	13	13	3	—	1	62
4	2	—	1	1	1	—	—	5
5	65	—	7	26	17	1	3	119
Miscellaneous	3a/	—	—	—	—	—	—	3
Total	232	7	32	71	27	2	5b/	376

a/ Includes 1 plan requiring 1½ years, 1 requiring 10 years and 1 with service varying with age.

b/ Includes 1 with age 40 men, 35 women; 1 with age 21 men, 30 women; 1 with age 30 men, 35 women; 1 age 28; and 1 age 40.

Table 3.—Percent of plans with minimum age requirement according to period written

Period in which plan was written	Percentage with minimum age requirement
1938	10%
1939	30
July 1940–July 1941	43
July 1941–July 1942	34
Subsequent to July 1942	38

Table 4.—Comparison of distribution of plans by minimum age requirement

Age requirement (men)	Plans underwritten July 1940–July 1941		Present study	
	Number	Percent of total with minimum age requirement	Number	Percent of total with minimum age requirement
25 and under	14	17	40	28
30	44	54	73[a]	51
35	20	24	29	20
40 or above	4	5	2	1
Total with age requirement	82	100	144	100

a/ One plan requiring age 28 tabulated as age 30 in this table only.

Note: The 5 plans appearing in column 7 and the 2 plans from column 6 of Table 2 have been reclassified in this table.

retirement benefits, but in the majority of the plans these restrictions are relaxed for older employees already employed at the inauguration of the plan, or it is stated that older employees will be provided benefits outside the plan.

These limitations are of two types: (1) the age before which an employee must be hired, or must have been hired, to be eligible for the plan; (2) the age before which an employee must have met all the other eligibility requirements in order to be eligible; in addition, an employee in service at time of inauguration must then be under this age. For example, the former provision might exclude persons employed after age 55; if 5 years' service were required for eligibility, then an employee age 60 could still join the plan provided he was employed before age 55. But where the plan is limited to employees under age 55 at the time all other eligibility requirements are met, it is obviously more restrictive. In the case of the 11 plans with the former type of provision, the number of years in the eligibility period has been added to the maximum age of employment specified, so as to put all the upper-limiting ages on the same basis. The upper-limiting ages for men in these plans then are as follows:

Ages	Number
Under 55	4
55-59	16
60 and over	43
Total	63

In 56 of the above plans the upper-limiting age is the same for both sexes; in 7 plans it is 5 years younger for women, and is as low as 48 in one case.

In addition to other requirements, 35 plans have an earnings requirement, usually $3000 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%, limited to salaried employees only, regardless of other conditions for eligibility.

V. NORMAL AND OPTIONAL RETIREMENT AGE

Most group annuity plans are designed to retire employees at a uniform age, which is referred to in the descriptive booklets as the "normal retirement age." If an employee is retired before the normal retirement age specified, the benefits payable at the earlier date will usually be the actuarial equivalent of the benefits already purchased and which would have become payable at normal retirement. In 20% of the descriptive booklets, retirement later than normal is not mentioned. Where later retirement is provided, the most usual provision is that the employee may continue to work with the employer's consent, but benefit payments will begin at the normal retirement date. In 17% of the plans retirement benefits do not begin at normal retirement age if the employee remains in service. Only 2 booklets stipulated that retirement at the normal date is compulsory. All of the plans provide that contributions cease at normal retirement date. In 1 plan the participant may elect to continue contributions, but employer contributions will cease.

Table 5 shows normal retirement ages for the 376 plans crossed with earlier optional retirement ages where classification is feasible. Normal retirement age is classified under four headings, "Men 60, Women 60"; "Men 65, Women 60"; "Men 65, Women 65"; and "Other." Included in the "Men 65, Women 65" column are 28 plans where the normal retirement age is deferred beyond 65 when the employee joins the plan within 5 or 10 years of retirement. For example, the normal retirement date may be determined as follows:

Age nearest birthday on date of inclusion in the plan	Normal retirement date is the first day of the month next following
55 and under	65th birthday
56	66th "
57	67th "
58	68th "
59	69th "
60-69	70th "

This type of "sliding scale" for retirements is a permanent feature of the 28 plans in question. A considerable number of other plans make use temporarily of a sliding scale and other devices for deferring

Table 5.--Earlier optional retirement age and conditions according to normal retirement age

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

a/ In 1 plan the company may retire participants earlier at its own instance.
b/ 1 plan limits optional retirement shown to "meritorious" cases, 1 to "unusual" cases, and 1 provides that the company may retire an employee earlier at its own instance.
c/ 1 plan limits privilege of optional retirement to "meritorious" cases.
d/ 2 plans omit hardship as a condition.

normal retirement for employees who are near or beyond retirement age when the plan is inaugurated, while persons employed later have a uniform retirement age.

Including these 28 plans, 82% of the plans retire participants at 65, 15% retire men at 65, women at 60, and the remaining 3% retire workers before or after 65. In this latter group, 5 plans stipulate age 60 and one age 62--these are the only plans with normal retirement below age 65 for men. One of the remaining plans provides retirement at age 70, except that those over 65 at inclusion in the plan must participate for 5 years, but with retirement not later than age 75; another retires men at 70, women at 65. For men, the normal retirement age is 65 in 97% of the plans, as compared with a slightly higher percentage in previous studies. A special study had previously been made in this office as to plans which provide for a lower retirement age for women than for men. The results of the special study and the present analysis are given below:

	Percent with Differential	Percent with No Differential	Total
Plans in effect 1936	33%	67%	100%
Plans written 1938-40	10	90	100
Plans written 1941-42	15	85	100
Present study	15	85	100

In the present study there are 3 plans which provide a supplemental annuity for women from age 60, their normal retirement age under the plan, to age 65, the minimum retirement age for old-age and survivors insurance.

Optional retirement before normal retirement age is important in considering the flexibility and generosity of the plans. Only 5 of the 376 plans did not provide for earlier retirement. Provisions for this option were analyzed as to the earliest time when retirement might be elected, and the conditions which must be fulfilled before the participant is eligible for early retirement. Table 5 shows that the majority of the plans do not place any condition other than age upon earlier optional retirement. In the 26 plans with earlier retirement age classified as "Miscellaneous," some condition other than age is required and alternative conditions are usual. Such uncla sified plans as do not have alternative conditions have been included in the discussion of the different requirements for optional retirement. In showing relationships, the total 376 plans have been used. The most usual time for earlier retirement, with or without other conditions, is within 10 years of normal retirement—found in 83% of the plans.

Of the plans having conditions in addition to age, 33 specify a minimum number of years of service with the firm, or participation in the plan, typically 10. Disability either alone or in combination was a condition in 31 plans. Of the 26 plans with optional retirement age unclassified, 13 provide optional retirement for disability as an alternative to other provisions. A distinction should be made between earlier retirement for disability and 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 which would normally commence at 65, since the provision is conceived of being insurance against the risk of invalidity. Earlier retirement for disability as permitted in these 31 plans simply makes the plans more flexible. The fact that disability is so often coupled with "hardship" as a condition emphasizes the nature of the provision.

Alternatives, other than disability, in the remaining unclassified plans are usually (1) the optional retirement age which the employee might elect without the company's consent, and (2) the optional retirement age at which he might be retired with the company's consent. The conditions of the latter are usually less restrictive than the former. For example, one plan with normal retirement age 65 provides that the company may at its option retire anyone at age 50, but if a participant age 50 has 10 years of service he may retire at his option (10 years of service is the only condition for vesting in this plan).

In 5 plans, 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 which would have been payable at age 65.

VI. RETIREMENT BENEFIT FORMULAS

Retirement benefits under group annuities are generally a function of earnings and of service. They may be provided on either the so-called "level cost" method or the "single premium deferred annuity" method. The level cost method in effect involves the determination of annuity benefit to be paid at retirement date and of potential death benefits, the cost of which is met through contributions of a level annual amount (either in dollars or as a percentage of earnings) spread over the period from the date of entrance into the plan to retirement date, taking into account interest and mortality factors. This method is not readily adapted to group annuities since it does not well lend itself to taking into account changes in earnings.

The other method, most commonly used in group annuities in both money purchase and definite benefit types, provides for purchasing annually a small-paid-up annuity deferred to retirement date. The amount purchased in a given year depends upon the total contribution of the year and the attained age of the employee. Under the money purchase type where, in general, the total contribution is merely a function of earnings and not of age, the amount purchased will be much more for an employee of attained age 25 than for an employee of attained age 50. The definite benefit type, on the other hand, provides for a yearly contribution which varies by the attained age of the employee. Usually, under contributory definite benefit plans, the employee contributes a fixed percent of earnings, with the employer contributing the balance to provide the deferred annuity representing the benefit with respect to that particular year of service. Thus, under this type, the employer pays relatively more for the older employee than for the younger. By and large, for money purchase plans, the <u>benefit</u> varies by attained age; for definite benefit plans, the employer's <u>rate of contribution</u> varies by attained age.

The preceding discussion refers mainly to benefits based upon service after the inauguration of the plan. Most of the plans also provide for benefits based upon past service, generally of a unit annuity type and based upon earnings at the time of the inauguration of the plan. The cost of such past service benefits is always paid for by the employer. Past service is occasionally recognized through a minimum benefit provision, which increases the benefit for those employees nearing retirement age at the time the plan is introduced. A few of the plans of this study do not distinguish between past and future service benefits. Most of such plans provide for a definite total benefit expressed as a percentage of average earnings (sometimes for the last few years of service) and are generally noncontributory.

For purposes of analysis, the 376 plans have been classified as "money purchase" (41); "unit annuity" (311)*; and "miscellaneous" (24). Four plans which vary the benefits according to whether or not the employees are covered under social security have been analyzed on the basis of employees so covered. Plans which use the money purchase method for future service benefits are classified under this heading. Of the 41 such plans, 23 use the unit annuity method for past service benefits; only 1 uses the money purchase method; while 15 provide no past service benefits within the group annuity plan. Under 1 plan the past service benefit depends upon the earnings of the company, and under another upon the employee's production.

The plans which have been classified as "unit annuity" plans, and which are included in Table A of the Appendix, are plans in which the only variation in benefit formula is due to differences in earnings; those which use a unit annuity method, but in which the benefit (future and past, or past only) varies according to age or time when earned, are classified as "miscellaneous."

In general, the 24 miscellaneous plans might be classified as definite benefit plans (as contrasted with money purchase plans). They include 10 plans where at least a part of the benefit is a flat percentage of earnings, not based upon years of service; 9 plans which provide for future service on a unit annuity basis, but with past service dependent on age, time, or service period when earned, or otherwise cared for by an over-all minimum which may take into account the number of years of past service; 3 unit annuity plans under which both future and past service benefits vary by age, or age and sex; 1 plan under which the monthly benefit is the average basic hourly wage times the total years of service; and 1 which provides a higher rate of unit annuity for the first 20 years of service than for later service. Of these miscellaneous plans, it may be said that 14 employ the unit annuity method for future service benefits, 10 of which employ this method for past service benefits also. Future service benefits under money purchase plans will be considered under the section on contributions.

Future and Past Service Unit Annuity Formulas.--Since the benefits provided under Federal old-age and survivors insurance are based on the first $3000 of annual earnings, many of the group annuity plans in supplementing these benefits provide a relatively larger benefit based on annual earnings over $3000 than on the first $3000 of annual earnings. In studying benefit formulas, differentiation has, therefore, been made as between the first $3000 of earnings and earnings in excess of $3000.

Under many plans employees are classified into groups by earnings. The benefit rate is applied to the midpoint of the earnings

* By "unit annuity" is meant a plan which provides a definite benefit (usually a percentage of wage) for each year of credited service.

of the class to determine the benefit for all within the group. For example, under a plan providing 1% of earnings for each year of service, the annual benefit at normal retirement age for all in the earnings class of $1560 to $1800 is 1% of $1680, or $16.80 for that particular year of service. If the employee in another year falls within a different earnings class, his benefit with respect to service for that year changes accordingly.

Table A of the Appendix indicates the wide variety of combinations of percentage of earnings used in determining benefits. Footnotes indicate modifications of the combinations, such as plans which have points of division in the formula below $3000 of earnings, those which exclude the first $600 of earnings*, and plans which give a flat amount for the first division of earnings, with a percentage added for the earnings above. Where the percentage can be applied to the entire earnings in excess of the first earnings class, no footnote appears, the benefit for the lowest group being considered as a minimum, or as an amount which would be provided under the formula for the average in the first earnings classification. The use of a flat amount for the first group tends to decrease slightly the benefits below those of the formula for employees earning in excess of the division amount. For example, if $9 of annual benefit per year of service is the flat amount for earnings of $1200 or less, and 1% is given on earnings in excess of $1200, an employee earning $1500 would have a benefit of only 4/5%; for one earning $2400 the benefit rate would be 7/8%. There are no footnotes indicating limitations as to maximum earnings used in determination of benefits where such maximum is above $3000. This provision, however, will be treated in another section.

There are 348 plans, or 93%, which use the unit annuity method for past or future service, or both. Of these, 321 plans use a unit annuity formula for all benefits provided. A unit annuity formula is used for all future service benefits in 325 plans, or 86%. In all, 338 plans provide for past service benefits; of these 326 use a unit annuity formula, including 23 which provide for future service benefits on a money purchase basis.

Considering plans which provide past and future service benefits on a unit annuity basis, it was found that 271 plans base benefits for both upon earnings both above and below $3000. The 271 plans consist of 261 with figures in all four columns of Table A, plus 10 from the miscellaneous group. The same percentage both above and below $3000 and for both future and past service is used in 35 of the plans; of these, 23 plans use 1% throughout. These 35 plans do not include those with a modification below $3000; there has not been taken into consideration any limit on the benefit through a maximum provision. In addition, there are 34 plans which make no distinction as between earnings above and below $3000, but

* The Federal old-age and survivors insurance program gives a benefit with respect to the first $600 of annual earnings which is relatively four times as much as that based upon earnings between $600 and $3000.

which use a different percentage per year of credited past service than for future service; 33 use a larger percentage for future service and 1 a larger percentage for past service. Finally, of these 271 plans, there are 12 which make no distinction as between the percentage for future and past service, but which give smaller benefits with respect to the first $3000 of earnings.

The total number of different combinations found among the 271 plans, which have a unit annuity basis and base benefits on wages both below and above $3000, is 112. The most popular formula provides future service benefits per year of service of ¾% of earnings below $3000, and 1½% above $3000, with uniform past service benefits of ¾% of earnings (usually at the earnings rate at time of inauguration) for each year of credited service. This is used in 32 plans (36 plans as shown in Table A, less modifications according to r/), or in 12% of the 271 plans. Related to the total 376 plans reviewed, this group accounts for less than 9%. The four most common benefit formulas are shown below:

Future Service		Past Service				
First $3000	Excess	First $3000	Excess	Number of Plans	Percent of 271 Plans	Percent of 376 Plans
3/4%	1½%	3/4%	3/4%	32	12%	9%
1	1	1	1	23	8	6
1	2	1	1	18	7	5
1	1½	1	1	15	6	4

These 4 formulas account for 88, or nearly one-third of the 271 unit annuity plans basing both future and past service benefits upon earnings both above and below $3000 of earnings; related to the total plans reviewed, they account for about one-fourth. The other 183 of these plans involve 108 different benefit formulas.

Among the 10 definite benefit plans not basing benefits upon years of service, all except 1 give a higher rate of benefit on earnings in excess of $3000 than on earnings up to $3000; in fact, 3 base benefits upon earnings in excess of $3000 only. A number of the plans give a flat benefit, plus a small unit annuity benefit on all earnings, or on those in excess of $3000. The most usual benefit provided in these miscellaneous plans is a total benefit of 15% of earnings up to $3000 and 25% of earnings in excess of $3000. Maximum and minimum benefit provisions are present in most of these plans.

The 28 unit annuity plans which base future service benefits on earnings above $3000 only (27 of these base past service on earnings above $3000 per year only) most commonly provide 1½% for future and ¾% for past service benefits (12 plans), followed by 4 plans using 1% for future and ¾% for past service. In all, 12 different formulas are used for these 28 plans; the future service benefit is 1½% of earnings above $3000 in 16 of the plans and 1% in 5 plans, while the rate for past service benefits varies from 3/8% to 1½%, with ¾% applying in 20 of the 28 plans.

Future Service Unit Annuity Formulas.—Considering future service only, there are 325 plans (311 from Table A and 14 from the miscellaneous group) which use the yearly unit annuity method. Of these, 3 base benefits on only the first $3000 of earnings (it is possible that the employers have additional plans covering earnings over $3000); 27 base benefits on earnings in excess of $3000 only; and 1 provides future service benefits based on earnings in excess of $3000 only, but with past service benefits for all employees based on earnings in excess of $600. There are, then, in all 294 unit annuity plans which base future service benefits on earnings both below and above $3000. A considerable number disregard the first $600 of earnings or have points of differentiation in addition to that at $3000; these will be considered in the section on integration. The number of combinations for future service benefits found among the 294 plans is 43. Modifications, as indicated in the footnotes of Table A, raises this to 52. After deducting those with modifications, the most common formulas for future service, expressed as a percentage of earnings per year of service, are:

First $3000	Excess	Number	Percent of 294 Plans	Percent of 376 Plans
3/4%	1½%	74	25%	20%
1	2	43	15	12
1	1	41	14	11
1	1½	30	10	8

These 4 future service benefit formulas are used in 64% of the 294 plans, or, related to all plans studied, just over 50%.

Since for most employees the larger part of the total future service benefits are related to the first $3000 of earnings, the percentages used on this portion have been considered separately. The number of plans employing the unit annuity method for some or all of the first $3000 of earnings is 297. Not including those with modifications, as indicated in footnotes of Table A, the most common percentages used for determining future service benefits based on the first $3000 are:

Percentage of Earnings	Number	Percent of 297 Plans	Percent of 376 Plans
1%	122	41%	32%
3/4	85	28	23
1/2	11	4	3
1½	9	3	2

Actually, if modifications (see footnotes of Table A) are not taken into consideration, the total number using 1% of the first $3000 of earnings for future benefits per year of service is found to be 137, or 46% of the 297 plans. If modifications of the ¾% formula (found in 16 plans) are disregarded, the proportion of the 297 plans using this basis is 34%. It will be noted that 69% of the 297 unit annuity plans basing future service benefits on some or all of the first $3000 use either 1% or ¾% in determining future service benefits; or, disregarding modifications, 80%. Among the 1% plans, 9 disregard the first $600, while only 1 of the ¾% plans uses this modification. On the other hand, the percentage is increased at $1200 or $1800 more frequently under the ¾% plans than under the 1% plans. Among the 297 plans, there are 34 different formulas applicable to the first $3000. This contrasts with 52 different combinations for future service benefits based upon earnings both below and above $3000, and with 112 combinations where both future and past service benefits are based upon some or all earnings above and below $3000.

Past Service Unit Annuity Formulas.--No past service benefits are provided under 38 plans, although in 3 of these plans they are provided for such employees as are not covered under social security. Benefits are furnished outside the group annuity plans by some of the other 35 employers; also the minimum benefit provision present in some plans has the effect of caring for past service for some of the older employees, although such minimum applies to new employees as well. The formulas considered apply to such past service as is credited. Limitations as to past service covered will be discussed later. In general, past service benefits are based upon the earnings of the year immediately preceding the inauguration of the plan; in a few plans, upon the average of the last 5 years preceding. The past service benefits are in all cases paid for entirely by the employer.

The yearly unit annuity method for past service benefits is used in 326 plans made up of 293 from Table A, 10 miscellaneous, and 23 plans which use the money purchase method for future service benefits.

The most commonly used formulas for unit annuities for past service are:

Percentage of Earnings		
First $3000	Excess	Number of Plans
3/4%	3/4%	86
1	1	75
1/2	1/2	29
3/4	1	10

Note: In addition to the above, 3 others use 3/4% of all earnings exclusive of the first $600; 7 others use 1% of all earnings exclusive of the first $600.

The past service benefit formulas are in general less generous, especially with respect to earnings over $3000, than those for future service benefits, although the reverse is true throughout in 1 plan and with respect to the first $3000 in 12 other plans; these 13 plans provide 1/3 to 1/2 more generously for such prior service as is credited than they do for future service. The same formula for future and past service benefits applies in 55 plans, or in 1/6 of the 321 using the unit annuity method throughout; of these, 35 do not differentiate between earnings above or below $3000. More common is the plan which uses the same formula for past and future benefits on earnings up to $3000, but gives one-half as large a percentage for past as for future service on earnings over $3000. Table 6 indicates the distribution of the plans according to the more common ratios between past service and future service benefit rates in 321 plans using the unit annuity method for all benefits.

The total number of different formulas where past service is based on earnings both above and below $3000 is 37 (corresponding number for future service is 52). The 2 most common (3/4% and 1% on all credited earnings) account for 161, or nearly one-half of the total.

There is much less differentiation in the formulas for past service than in those for future service as between benefit rates for the first $3000 and those for earnings over $3000. Table 7 gives the distribution of plans according to the more common ratios.

As indicated by the table, 22% of these plans providing unit annuity benefits use a uniform percentage of all earnings for future service and 60% use a uniform percentage for past service. In contrast with this, 38% use a rate 1/2 as large for earnings under $3000 for future service, while only 5% show this ratio for past service.

Comparison of Benefits Under Contributory and Noncontributory Plans.—Somewhat more uniformity is found in the noncontributory

Table 6.--Unit annuity plans classified by ratio of past service to future service benefit rate on first $3,000 of earnings and on excess

Ratio (Past to future)	First $3,000	Excess of $3,000
More than 1..................	13	1
1 (same).....................	150	65
3/4..........................	30	22
2/3..........................	26	60
1/2..........................	12	81
No past service..............	22	20
No future service............	1	--
No past or future service....	24	3
Other ratios including varying	43	69
Total.............	321	321

Table 7.--Unit annuity plans classified by ratio of benefit rate for first $3,000 of earnings to that for excess

Ratio of benefit rate on first $3,000 to benefit rate on earnings above $3,000	Number of plans	
	Future service	Past service
More than 1......................	--	2
1 (same).........................	71	196
3/4..............................	8	12
2/3..............................	33	16
1/2..............................	123	17
Plan covers first $3,000, or less, only..........................	4	4
Plan covers above $3,000 only.....	27a/	27a/
Other rates including varying.....	59	52
Total.................	325	326

a/ 26 are identical plans.

than in the contributory plans. Disregarding minimum and maximum benefit provisions, 16% of the 159 noncontributory plans treat all earnings alike and use the same formula for future and past service benefits, as compared with 4% of the 217 contributory plans. No distinction is made between the first $3000 of earnings and the excess in determining future service benefits in 30% of the noncontributory plans, in contrast with 19% of the contributory plans. Of the noncontributory plans, 29% use the same rate for future and past service benefits; of the contributory, 9%. Past service and future service benefit rates applicable to the first $3000 of annual earnings are alike almost twice as frequently among the noncontributory plans as among the contributory (65% in contrast with 33%). The future and past service benefit rates are less frequently the same with respect to earnings in excess of $3000, being alike in but 27% of the 137 unit annuity noncontributory plans providing both types of benefits, and in 15% of the 184 corresponding contributory plans. Since under the contributory plans the employee contributes with respect to future but not to past service benefits, it is not surprising that relatively more of the contributory plans furnish larger benefits for future than for past service.

The most common benefit formula (¾% of the first $3000 of earnings and 1½% on the excess for future service, with ¾% on earnings both above and below $3000 for past service) occurs in only 7% of the 217 contributory plans; among the 159 noncontributory plans, in 12%. The 5 most common benefit formulas (combinations of future and past service unit benefit rates) account for 36% of the noncontributory plans and 19% of the contributory. There are 118 noncontributory plans which base benefits for both past and future service on part or all of the earnings both below and above $3000; among these are found 64 different formulas. The corresponding figures for contributory plans are 153 plans using 70 different formulas.

In considering the formulas for future service benefits only, the 4 most common (as shown on page 18) account for 64% of the noncontributory and for 41% of the contributory plans. The greatest variance is in the percent using the formula which provides uniformly 1% of earnings per year of service; this formula is used in 18% of the noncontributory and in 6% of the contributory plans. The most common future service benefit formula for each type (¾% of the first $3000 and 1½% of excess) is found in 21% of the noncontributory and in 19% of the contributory plans.

Table 8 gives the distribution of the 335 definite benefit plans according to the differentiation in the treatment of the first $3000 of earnings and of the excess in determining future service benefits by type of plan. Under noncontributory definite benefit plans the same future benefit rate applies to all earnings twice as frequently as under contributory plans. Under the 39 contributory money purchase plans, regardless of earnings level, the

Table 8.—Distribution of contributory and noncontributory definite benefit plans by relative future service benefit rates for earnings groups

	Number of plans			Percentage distribution		
	Total	Contributory	Non-Contributory	Total	Contributory	Non-Contributory
Uniform for all earnings............	71	25	46	21%	14%	29%
Plan covers first $3000 or less only	4	2	2	1	1	1
Plan covers above $3000 only........	31	24	7	9	13	5
Higher on earnings below $3000......	1	--	1	--	--	1
Higher on earnings above $3000......	228	127	101	69	72	64
Total...............	335	178	157	100	100	100

same benefit rate--as determined by the contribution rates--is used in one-third of the plans, while 1 of the 2 noncontributory money purchase plans uses the same rate for all earnings.

In summary, among the total 217 contributory plans the benefit formulas are more liberal with respect to earnings in excess of $3000 in 171 plans (including 24 which pay only on such earnings), or in 79%; among the 159 noncontributory plans 109, or 69%, are found to be more liberal with respect to the higher portion of earnings (of these, 8 cover only those earning in excess of $3000). A relatively larger proportion of the plans covering only those earning in excess of $3000 are contributory (75% as against 58% for all plans studied).

With respect to the first $3000 of annual earnings, the most common future service benefit rate is 1%. This rate occurs in 25% of the 217 contributory and in 43% of the 159 noncontributory plans. The next most common, ¾%, is found in 20% of the contributory and 27% of the noncontributory. Thus, these two benefit rates on the first $3000 of earnings account for 45% of the contributory as compared with 70% of the noncontributory. Related to unit annuity plans (exclusive of those varying by age or period when "earned"), they account for 55% of the contributory and for 76% of the noncontributory.

Unusual methods of providing benefits are found more frequently among the noncontributory type of plan. Among the 5 plans which provide a unit annuity future service benefit varying by age or period when "earned," 4 are of the noncontributory type, and among the 10 definite benefit plans not using the unit annuity method 9 are noncontributory.

While both the most generous and the least generous benefit formulas in relation to wages are provided in noncontributory plans, the contributory are on the average more generous with respect to future service benefits. The unit annuity benefit rates, averaged for the number of plans to which they apply, are given below. Under the contributory plans on earnings above $3000, the past service benefit rate thus averaged is 60% as high as the benefit rate for future service; on the first $3000, 86% as high. For noncontributory plans, the corresponding ratios are 72% and 90%, respectively.

	Benefit Rate as Percent of Earnings per Year of Service	
	Contributory	Noncontributory
Future service, 1st $3000	.94%	.90%
Future service, excess	1.50	1.39
Past service, first $3000	.81	.81
Past service, excess	.90	1.00

Note: Averages are those of all plans having a benefit rate for the particular category considered, with equal weight being given to each such plan.

Limitations in Determination of Credited Past Service.--For the purpose of providing benefits based on service performed before the plan became effective, a certain amount of such service is commonly excluded. About 76% of the plans exclude some or all past service. The most usual practice is to exclude approximately the same number of years of past service as is required for eligibility to the plan and/or service before the minimum age for eligibility. This insures that new employees will not receive benefits on a smaller portion of their actual service than older employees.

Table 9 shows the major types of exclusions and the number and percentage of the plans with such provisions. Exclusions combining age and service make up the largest group. Provisions of this type are usually stated ". . . excluding the first n years of past service and any year of service before age x." Thus, the age when service is performed may cut down credited past service by more than the minimum number of years stipulated as excluded. For example, in a plan that excludes the first 5 years of past service and any service before age 35, an employee entering the company at age 27 and joining the plan at age 35 would have all 8 years of past service excluded. In the same plan, an employee entering the company at age 32 and joining the plan at age 37 would have only 5 years of past service excluded.

The most common exclusion (Table 10) is the first 5 years of past service without reference to age when service was performed (33 plans). The most common combination of age and service exclusions is 5 years of service and any service before age 35 (21 plans). Where age alone is the basis for exclusion, service before age 35 is most usually omitted (22 plans). Without reference to combinations, age 30 (58 plans) is the most common limiting age, followed closely by age 35 (57 plans).

There are 76 plans, or 20%, which do not exclude any service from the calculation of past service benefits. Eleven of these plans 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 becoming covered by the plan when eligible in the future. In this respect, it should be pointed out that most plans give past service 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 started.

Included in the 76 plans which do not exclude any past service, are 6 plans that place a limit on years of past service which may be credited; 13 plans among the 285 that have various types of exclusions also have such a limit, usually 10 years, although 2 are as low as 5 years. A very few plans impose an over-all limit on the years of past and future service which will be used to compute benefits, usually 20 or 30 years.

Table 9.--Distribution of plans by type of provisions for exclusion of past service

Type of exclusion	Number	Percentage
Age and years of service	97	25.7%
Years of service	76	20.2
Age	54	14.4
All past service excluded	38	10.1
Past service prior to a given date	7	1.9
Years of service and any prior to a given date	4	1.1
Age and years of service and any service prior to a given date	4	1.1
Age and any service prior to a given date	3	.8
Miscellaneous	2	.5
Total with exclusions	285	75.8
No service excluded	76	20.2
Not divided into past and future service, or past service taken care of in minimum	13	3.5
Past service formula not given	2	.5

Table 10.--Distribution of plans by provisions for age and service exclusions of past service

Years of Service **Excluded**	Service excluded before age							
	No age exclusion	25 and under	30	35	40	Above 40	Other	Total
None	83	5	17	22 a/	9 a/	4	1	141 b/
1	14	2	10	5	1	-	-	32 c/
2	15	1	3	2	1	-	-	22 d/
3	14	5	12	5 a/	4	-	1	41
4	2	-	—	2	-	-	-	4
5	33	3	16	21 a/	3	2	1	79
Other	2	-	—	—	-	-	-	2
Total	163	16	58	57	18	6	3	321

a/ 1 plan provides 5 years younger for women with normal retirement age being 5 years younger than for men.

b/ 11 plans also exclude any service before a given date; 7 of these have no age or years of service exclusion.

c/ 2 plans also exclude any service before a given date.

d/ 1 plan also excludes any service before a given date.

Note: The remaining 55 of the 376 plans consist of 13 plans with past service taken care of in over-all formula or minimum, 2 plans with miscellaneous exclusions from past service, 2 plans for which the past service formula was not given, and 38 plans with no provision for past service.

A number of plans provide a minimum benefit irrespective of years of service. This tends to give a larger benefit than the formula future service benefit for the employees at the higher ages, but the minimum applies whether or not an employee had any service before becoming eligible for the plan.

A significant number of plans propose to provide participants with annuities equal to a certain percentage of average earnings (such as 25%), and if credited annuities will not provide this minimum, the company will purchase supplemental annuities to make up the difference. A few plans of this type do not directly provide any past service benefits and are tabulated accordingly, but older employees retiring under such plans soon after the effective date will get approximately as large a retirement income as if past service had been bought for them.

Some of the plans which exclude all past service in computing benefits are for organizations which have had plans of a different type preceding the group annuity and which, therefore, do not need to provide past service benefits. Some other plans with no past service benefits have supplemental plans to take care of older employees (those within 5 or 10 years of retirement). It is not possible to determine the exact number of companies represented which do not provide some method, formal or informal, of recognizing prior service.

Maximum Benefit Provisions.—Many plans limit benefits either through a maximum annuity provision, or through restricting the amount of salary upon which contributions and benefits (or benefits in the case of noncontributory plans) are based. Of the 376 plans, 167 (or 44%) do not provide for a maximum benefit. This compares with about 38% for the group annuities underwritten during the 2-year period preceding this study. A maximum annuity provision is found in 159 plans. There are 69 plans which have a provision as to the maximum salary upon which the contributions and benefits are based, and of these 19 also have a provision for limitation of annuities. The distribution of the plans with respect to maximum annual annuity is shown in Table 11. The maximum of $6000 is by far the most common; in an earlier study a maximum of $5000 was most commonly found. Among the 24 "Other" are 7 plans with maximum annual annuities below $5000; 8 with maximums above $5000 but below $10,000; 7 with maximum above $10,000, of which 5 are above $15,000; while 1 is 20% of salary for those with incomes in excess of $10,000, and another mentioned the maximum "set forth in the contract."

Table 12 gives the distribution of the 69 plans with future service benefit limited through limitation of the annual salary used in computing the benefit. The most prevalent maximum annual salary is $10,000 found in 9 plans, followed by $15,000 and $3000 found in 7 plans each. In all, there are 37 different maximums among the 69 plans using this method of limitation. Sometimes

Table 11.—Plans by amount of maximum annual benefit

Amount	Number
$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
Total	159

Table 12.—Plans by maximum annual credited salary[a/]

Amount	Number
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
Total	69

a/ Maximum amount used in computation of future service benefits, and contributions (if any).

the amount of salary is restricted for past service benefits and not for future service benefits; also in some plans the maximum used in determination of past service benefits differs from that for future service.

Among the 19 plans where there is a maximum benefit and also a maximum annual salary used for determination of benefits, no two are alike. The ratio between the two amounts, in general, averages about 40%. As an example, one plan limits the salary used to the first $15,000 of annual salary with a further restriction of the benefit to a maximum of $6000 per year.

As previously noted, a limitation as to the number of years of service which may be credited for retirement benefit occurs in a few of the plans.

VII. CONTRIBUTIONS AND THEIR RELATIONSHIP TO FUTURE SERVICE BENEFITS

Table 13 gives the most usual employee contribution rates expressed as a percentage of earnings among the 217 contributory plans classified by the rate on the first $3000 of earnings. The most common employee contribution formula calls for 2% on the first $3000 of earnings and 4% on earnings in excess of $3000 (47 plans), the next most common being 2½% and 5%, respectively, (16 plans). The highest contribution rate on amounts below $3000 was 6% (1 plan) and in this case the rate was only 4% on the first $600 of earnings.

The same employee contribution rate applies above and below $3000 in 37 plans, or 17% of the 217 contributory plans. The contribution rate below $3000 is one-half as much as that above $3000 in 82, or 38% of the plans. In all, there are 68 different employee contribution formulas among the plans studied. This corresponds with 143 different future service benefit formulas (including noncontributory plans and plans which do not separate the past and future service benefits).

Of the 40 plans appearing in the "Other" classification of Table 13, 28 have contribution rates on part of the first $3000 corresponding to rates shown in the table but with a second division point below $3000, of which 6 are plans that merely exclude the first $600 of earnings. Nine plans of the 40 have a rate below 4% on the first $3000, but different from those listed specifically in the table. The remaining 3 plans consist of 1 plan calling for from 4 to 6% on earnings below $3000 and from 6 to 9% above $3000, depending upon the age at entrance into the plan; 1 providing for a flat annual contribution of $120 or $240, depending upon age in the year of contribution; and 1 providing that the employee may elect to contribute 2, 3, or 4% of earnings, with the employer contributing two times that amount.

Costs for all past service benefits, when provided, are paid by the employer under all the plans studied. Under the definite benefit plans, the employer bears the balance of the future service benefit costs under the 217 contributory plans, and, of course, the total cost of the 159 noncontributory plans. There appears to be no decided difference between employee contribution rates in money purchase plans and those in definite benefit plans, although there are 3 money purchase plans calling for the relatively high contribution rate of 5% on all earnings. The plan calling for 6% (4% below $600) is not a money purchase plan.

The average employee contribution rate requirement under unit annuity plans with a uniform rate on the first $3000 of earnings is 2.4% up to $3000, and on such earnings in excess of $3000 as are

Table 13.—Employee contribution rates

On first $3000	On excess over $3000		Number	Percent of 217 plans
	Varies from	Most prevalent		
None......	1% to 5¼%	5% (13[a] plans)	26[b]	12.0%
1%........	0[c] to 3½	1 (4 plans)	8	3.7
1½........	1½ to 4½	3 (5 plans)	8	3.7
2.........	0[c] to 5	4 (47 plans)	69	31.8
2¼........	0[c] to 5¼	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[c] to 6	5 (3 plans)	7	3.2
Other.....	-------	--------------	40	18.4
	Total..........	....	217	100.0

a/ Noncontributory benefits provided on earnings below $3000 in 3 of these plans.
b/ Noncontributory benefits provided on earnings below $3000 in 5 of these plans.
c/ One plan gives benefits based on first $3000 of earnings only.

credited is 4.0%. The corresponding contribution rates average 2.7% and 4.0%, respectively, for the contributory money purchase plans. The average employer contribution rate requirement under the contributory money purchase plans is 4.2% on the first $3000, and 5.6% on earnings in excess of $3000.

Considering the employee contributions and unit annuity benefit rates jointly, combinations appearing in 5 or more plans are shown in the following table:

Employee Contribution Rate		Benefit Rate				
		Future Service		Past Service		
First $3000	Excess	First $3000	Excess	First $3000	Excess	Number of Plans
0%	0%	3/4%	1½%	3/4%	3/4%	17
0	0	1	1	1	1	14
0	0	1	1	3/4	3/4	11
0	0	1	1½	1	1	11
0	0	1	2	1	1	7
2	4	3/4	1½	3/4	3/4	7
2	4	1	2	1	1	6
0	0	3/4	1½	1	1	5

These 8 combinations account for only 78 of the 321 plans which might have been similarly classified. Of the 78 plans, all but 13 are noncontributory. This indicates how few of the plans, even with respect to contributions and retirement benefits, are alike. Further reduction in "like" plans would be shown if other factors were considered jointly with these.

The combined contribution rate (employee plus employer) for future service benefits does not vary with earnings in 15 of the 39 contributory money purchase plans. In 5 of these 15 plans the total contribution rate for future service benefits is 5% (in 3 of which the rate is higher for employees not covered for social security); in 2 the combined rate is 10%; in 1 each the combined rate is 6, 7, 7½, 8, 9, 12, and 15%; and in 1 the rate varies by age.

The most common employee contribution rate among the 24 other contributory money purchase plans is 3% on the first $3000 of earnings, with 5% on the excess, and with like contributions from the employer (3 plans). Three other combinations occur 2 times each. One of these calls for employee contributions of 2% on the first $3000, and 3% on the excess, with employer contributions 2½ times as large; another provides for employee contributions of 2% on the first $1800, 4% between $1800 and $3000, and 6% on earnings in excess of $3000, the employer contribution being 1¼ times those of the employee; while the third calls for a contribution of 2% from both employee and employer on the first $3000 only.

The distribution according to the ratio of employer contributions for future service to the employee contribution under the money purchase plans is as follows:

Ratio Employer to Employee Contribution	Number of Plans
Equal matching	15
1¼ times	3
1½ times	10
2 times	4
2½ times	1
4 times	2
1 to 6 times (depending on age at entrance)	1
2½ times to $1800; 1-2/3 times, $1800 to $3000; equal matching above	1
2 to 3 times to $3000, depending on age; 1-2/3 to 2-1/3 on earnings above $3000	1
Noncontributory to $1800, equal matching above	1
Noncontributory	2
Total	41

Under the 2 noncontributory money purchase plans, the employer pays 5% of employee earnings for future service and under 1 partial contributory plan 3% on the first $1800 for future service. About 62% of the contributory money purchase plans call for larger contributions from employer than from employee for future service benefits. The corresponding figure in a previous study was 16%. The average employer contribution requirement on the first $3000 (where the rate is uniform to $3000) is 4.2% of earnings; for earnings above $3000 the average is 5.6%

Averaging the contribution rates required under contributory money purchase plans shows that the employees bear about 40% of the cost of future service benefits based on the first $3000 of earnings and 42% based on earnings in excess of $3000. In some of the plans the employer pays an additional amount when necessary to provide a stated minimum benefit.

Relative Proportion of Future Service Benefits Furnished by Employer Contributions.--An attempt was made to determine the number of plans under which the employer paid for approximately the same proportion of the future service benefits, regardless of the earnings level of the employee (disregarding the differences in cost due to differences in age distribution). Under the 157 definite benefit noncontributory plans (disregarding maximum provisions) all earnings are treated alike in 43 plans. Three other plans which do not differentiate between earnings below and above $3000 vary the benefit according to the age group of the employee at the time benefits are earned. The portion of the benefit based upon earnings above $3000 is relatively higher than that based upon earnings below $3000 in 101 of the 157 noncontributory plans; in 7 others earnings below $3000 are disregarded; in 2, earnings above $3000 are disregarded; and in 1 the benefit is relatively larger for earnings below $3000 (due to a relatively high flat benefit for the first $1200 of earnings).

The ratio of employer contribution to employee contribution is the same on all earnings upon which benefits are based in all except 3 of the 39 contributory money purchase plans. In 1 of these, there is no employee contribution on the first $1800 of earnings, although the employer contribution is based upon all earnings; in the other 2 the ratio of employer contribution to employee contribution is more on the first $3000 than on earnings over $3000. In 3 of the 39 plans contributions are based on the first $3000 only. It may, therefore, be said that in these latter 6 plans the employer bears a larger proportion of the cost of the benefits based on the first $3000 of earnings than of those based on the excess.

The 15 partial contributory definite benefit plans in all cases show a relatively lower relationship of employee contribution to future service benefit with respect to the lower portion of earnings than for that portion in excess of $3000. In such plans the employer bears a larger proportion of the cost on the lower portion of earnings than on the higher. Four of the definite benefit plans and 3 of the money purchase contributory plans base contributions and benefits on only the first $3000 of earnings. Each of the latter has a supplementary plan, not of the group annuity type, giving benefits with respect to earnings above $3000. In addition, 19 of the 164 contributory definite benefit plans provide a lower ratio of contribution to future service benefit with respect to the first $3000 than to earnings in excess of $3000, often due to an increase in the benefit rate at a point below $3000, with no corresponding increase in contribution rates; or to the elimination of the first $600 for contributions, with no corresponding elimination for future service benefits. The ratio of employee contribution rates to benefit rates is uniform for all credited earnings in 138 definite benefit plans. Under such of these plans as base benefits on earnings above and below $3000

(117 plans) the employer bears a uniform proportion of the cost of the future service. 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 these in addition. Earlier studies showed a 3-to-1 relationship to be more common, this appearing in 40% of the plans with uniform rates. The table 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	Plans Based on Earnings: Above and Below $3000	Above $3000 only	Below $3000 only	Total Plans	Percent Distribution
2 times	44	1	1	46	33%
2-2/3 times	32	·1	--	33	24
3 times	19	2	1	22	16
3-1/3 times	9	11	--	20	14
Other	13	4	--	17	13
Total	117	19	2	138	100

Under plans of the present study, where there is a uniform relationship, the average number of years of retirement benefits required for a full return of employee contributions (exclusive of past service benefits) is slightly over 2.5 years. The corresponding figure for the previous study was 2.8 years.

Tables 14 and 15 summarize the above discussion, the former dealing with contributory and the latter with noncontributory plans. Considering them jointly, employerspay the same proportion of the cost of benefits based on earnings above $3000 as on earnings below in 197 plans, or in 53% of all plans.

Among plans which cover earnings both above and below $3000 there are 101 (all noncontributory) which give relatively larger benefits with respect to that portion of earnings above $3000; in addition there are 32 plans which cover only earnings above $3000. Thus, under 133 plans (35%), it may be said that the employer bears relatively more of the cost with respect to the earnings in excess of $3000 than for the first $3000.

There are 35 contributory plans under which the employer pays a larger proportion of the cost of that portion of benefit based on the first $3000. In addition, 7 plans base benefits on the first $3000 only and a single noncontributory plan has a relatively larger benefit rate on the first $3000 of earnings. Thus, under 43 plans (11%), the employer bears relatively more of the cost with respect to the first $3000 of earnings than for the excess.

Table 14.—Contributory plans by relative proportion of future service benefits paid for by employer for earnings above and below $3000

Proportion paid for by employer	Earnings credited	Number of plans			Percentage distribution
		Money purchase	Definite benefit	Total	
Uniform...............	Above and below $3000	33	117	150	69.2%
Larger for over $3000..	Above and below $3000	—	—	—	
Larger for over $3000..	Above $3000 only.....	—	24	24	11.0
Larger for first $3000.	Above and below $3000	3	32	35	16.1
Larger for first $3000.	Below $3000 only.....	3	2	5	2.3
Miscellaneous and unclassifiable.................		—	3	3	1.4
Total plans......................		39	178	217	100.0

Table 15.—Noncontributory plans by relation between future service benefit rates for earnings above and below $3000

Benefit rate	Earnings credited	Number of plans			Percentage distribution
		Money purchase	Definite benefit	Total	
Uniform...............	Above and below $3000	1	46	47	29.7%
Larger for over $3000..	Above and below $3000	—	101	101	63.5
Larger for over $3000..	Above $3000 only.....	1	7	8	5.0
Larger for first $3000.	Above and below $3000	—	1	1	.6
Larger for first $3000.	Below $3000 only.....	—	2	2	1.2
Total plans......................		2	157	159	100.0

VIII. CASH BENEFITS AT TERMINATION OF SERVICE OR DEATH

At termination of service before normal retirement age, benefits may be of 2 types: cash withdrawal benefits, or deferred annuities available if the employee's contributions (if any) are also applied to provide a deferred annuity. The latter are discussed in Section IX. The following paragraphs will be largely limited to a discussion of the cash benefits available at termination of service, or at death. Since the primary purpose of the group annuities is to provide retirement benefits most plans provide death and withdrawal benefits based upon the employee's contributions only. In considering death benefits, it should be borne in mind that benefits in the form of periodic payments to survivors of these employees are provided under the Federal old-age and survivors insurance program and that most of the companies included in this study also provide for group life insurance.

Noncontributory plans.--Under the 159 noncontributory group annuities of this study, 151 provide no cash termination benefit. Eight plans provide for cash benefits, the most usual being the employer's contributions with interest, which, if taken, would eliminate any annuity benefit; the cash option of 3 of the plans is dependent upon a certain number of years of service. All except 10 of the 159 noncontributory plans provide for vested benefits in the form of deferred or immediate annuities for those meeting certain eligibility requirements (age, service, length of membership, or combinations thereof).

Provision for death benefits under the noncontributory group annuity plans (probably many of the organizations also carry group life insurance) are similar to the termination of service benefits, except that a larger number provide a death benefit. In addition to the 8 noted above, there are 8 others which provide for a cash benefit of the employer's total contributions with interest if death occurs before retirement. Except when an optional form of benefit is elected, there is generally no death benefit after retirement under noncontributory plans. 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. Most plans do not provide for cash benefits while the employee is still in service. However, 1 noncontributory plan provides that the employee, after 3 years of membership, may surrender at any time 1/2 of his benefit rights for 45.6% of the employer's contributions accumulated at 2% interest.

Contributory Plans.--Cash benefits equal to the employee's contribution with interest are payable upon termination of service before retirement age under 204 of the 217 contributory plans. The interest rate specified in each of these is 2%, although this rate may be changed at 5-year intervals, but only with respect to contributions made subsequent to the change. Under the remaining 13 plans, the employee's contributions without interest are payable. Thus, 94% provide for return of contributions with interest. This is a considerably higher proportion than shown in earlier studies. Eight of the plans provide for additional cash benefits with respect to some or all of the employer's contribution should employment be terminated before retirement age. In general, the employee who is entitled to a cash benefit may, in lieu thereof, elect an annuity deferred to normal retirement age. A number of plans permit the deferred annuity in lieu of the cash benefit only if the amount purchaseable is in excess of $40 or $60 annually. Under 1 plan a cash termination benefit is provided with respect to the employer's contribution only if the total cash available is less than $1000; otherwise the deferred annuity only is available.

Death benefits under contributory plans before retirement are usually the same as the cash termination of service benefits. A few plans which do not provide a cash termination benefit with respect to the employer's contributions do provide a cash death benefit before retirement equal to a portion, or all, of the employer's contributions.* The death benefit after retirement under contributory plans is dependent on the form of the annuity provided. 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 after retirement of the modified cash refund annuity is the sum of the employee contributions, usually with interest to retirement date (depending on the provision for death before retirement), less the sum of the total annuity payments made prior to death. The few plans which provide 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 where an option is chosen, 7 of the contributory plans do not provide any death benefit after retirement, the normal annuity being similar to an individual life annuity without a guaranteed number of payments and therefore relatively larger than the modified cash refund annuity. The death benefit after retirement under 3 other contributory plans is a continuation of the annuity until the end of 10 years after retirement if the individual dies during the 10-year period.

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* In addition to the return of the employee's accumulated contributions.

IX. VESTING

"Vesting" is a term used to denote the right of the employee upon termination of employment before retirement date to a part or all of the benefits already purchased by the employer's contributions made in his behalf. Usually in contributory plans this is conditioned upon the withdrawing employee leaving his 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 contribution and by a part or all of the employer's contributions. Since there is usually no cash withdrawal privilege in noncontributory plans, the right to receive benefit of the employer's contributions is automatic upon fulfilling conditions of vesting. For example, the vesting provision might be stated, "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." In a few plans, both contributory and noncontributory, the employee is given the privilege of electing a cash payment made up of part or all of the employer's contributions in lieu of part or all of the vested deferred annuity. These provisions were discussed more fully under Section VIII.

There are a number of forms of vesting which in this study have been designated (1) immediate full vesting, (2) deferred full vesting, and (3) deferred graded vesting. Immediate full vesting applies to plans where 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 provided in the plan. Graded vesting provides that a stated percentage of annuities purchased will vest in the employee when certain conditions have been met and this percentage of annuities vesting will be increased to the full amount as additional conditions are met. For example, the participant may become entitled to 25% of the annuities purchased by the company's contributions after 5 years' service and to 5% additional for each additional year of service, graduating to complete vesting after 20 years of service.

The total number of plans with some form of vesting of employer's contributions is 349, or 93%. This is about the same percentage as was found in group annuities written in the period 1939-42.

Table B in the Appendix shows in detail the conditions for vesting, except for 26 plans with alternative requirements for vesting. Examples of alternative vesting appear at the end of the table. Most of the alternative vesting provisions are unique and, therefore, do not lend themselves to tabulation except on an individual basis. Alternative plans were, therefore disregarded in considering the plans with service, participation, age, or combinations of the three conditions, and in selecting "most usual" provisions; however, their various requirements do not appear any more or less liberal than those of the other plans. It might be mentioned that 3 plans which have other provisions for vesting also provide, under certain conditions, for vesting upon disability. Where the provisions for vesting were different for past and future service (this was true of 9 plans), the future service provisions only were considered.

The most usual requirement for vesting is years of service (Table 16). Service alone is required in 88 plans, or about 24%, and service, combined with either participation in the plan, or age, or both, is required in 128 additional plans, or 34% of the total. Service was the most popular requirement for vesting in plans previously studied, but there are no exactly comparable figures. The table below gives years of service requirements for all plans with such requirement. The minimum requirement for vesting to begin was tabulated in the case of graded vesting.

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

Deferred graded vesting commonly begins at 10 years, with full vesting at 20 years, but almost as many begin at 5 years, becoming full at 20 years.

Participation alone (i.e., contributions in contributory plans or membership in noncontributory plans) is a condition for vesting in 75 of the plans (20%), and participation is a condition either alone or in combination in 140 plans (37%). Five years of participation is the most usual provision in deferred full vesting; where graded vesting is provided, 5 years is also the most usual minimum requirement, with complete vesting in 20 years. Both provisions were typical of plans previously analyzed.

Age alone is a condition of vesting in only 7 of the plans (2%), but a total of 128 (34%) have an age requirement. The

Table 16.--Plans classified by type of vesting requirement

Requirement	No. of plans	Percentage distribution	Most usual provision[a]
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	----------------------
Total........	376	100	

	Number	% of total
Total plans with service requirement, alone or in combination........................	216	57%
Total plans with participation requirement, alone or in combination.................	140	37
Total plans with age requirement, alone or in combination........................	128	34

a/ Years of service includes both years of participation and years of service performed before participation.

following table shows minimum age requirements; where vesting is graduated with age the minimum age only is tabulated:

Minimum Age	Number of Plans	Percentage Distribution
35	2	2%
40	25	20
45	39	30
50	28	22
55	31	24
60	3	2
Total	128	100

Combinations of age and service continue to be popular as conditions for vesting, and the most typical requirement, age 40 with 10 years' service, is the same as in earlier studies. However, when age and service conditions are tabulated without reference as to how they are combined (see above tabulation), ages 45, 50, and 55 are all more common than age 40. The most common combination of participation and age is 5 years' participation, age 45.

The amount of pension vested in employees with vesting rights is as follows:

Amount Vested	Number of Plans	Percentage Distribution
All annuities purchased	256	73.3%
Varying percentage of annuities purchased, depending on length of service, participation, age, etc.	81 a/	23.2
Future service annuities only	10	2.9
50% of future service annuities, all past service annuities purchased	1	.3
90% of annuities purchased	1	.3
Total with vesting	349	100.0

a/ This consists of 72 graded vesting plans (1 graded vesting plan vests as to future service only and appears in the next item) and 9 plans which have different conditions for vesting of future and past service.

In connection with the above table it should be emphasized that in addition to the vested benefits provided by the employer's contributions the annuities purchased by the employee's own contributions remain to his credit at all times unless he elects a cash withdrawal benefit. Employees terminating with deferred annuity rights may, subject to certain conditions, elect to receive the benefits at an earlier optional retirement date on an actuarially reduced basis.

Future service annuities are usually purchased currently, but the purchase of total past service credited for all employees under the plan is usually spread over 10 years or longer. The Treasury regulations (simply stated) allow the employer only 10% of the cost of past service annuities as a yearly deduction for income tax purposes; hence the employer frequently contributes only said 10% per year. Employers generally prefer to buy past service for older employees first. If past service benefits have not been entirely purchased, some plans provide that terminating employees who have met vesting requirements be continued in the program of past service benefit purchase.

A more comprehensive analysis of vesting has been made in this study than in those previously made in this Office, but there are some comparable data available. In the present study a slightly larger percentage of plans with vesting appears than in studies dealing with plans underwritten from July 1939-July 1942 (93% as against 92%). In this study immediate full vesting of all annuities purchased is present in only 1% of the plans, but was found to be present in 5% of plans underwritten between July 1941 and July 1942. Graded vesting was provided in about 23% of the 376 plans, whereas a former study (July 1939-July 1942) showed about 21% of the plans with graded vesting. It is sometimes asserted that while vesting is becoming more common, the conditions for vesting are being made more restrictive. With the exception of immediate vesting, which is less frequent in the 376 plans than in plans previously studied, no significant change toward more restrictions on vesting is apparent in this group of plans.

X. INTEGRATION WITH RETIREMENT BENEFITS UNDER SOCIAL SECURITY (Old-Age and Survivors Insurance)

The benefits under all plans of this study supplement those under the Federal old-age and survivors insurance program. As previously noted, many of the benefit formulas take into consideration the benefit formula of the Federal program. The formula under this program is based upon the first $3000 of annual earnings, with that portion of the benefits based on the first $600 being relatively 4 times as large as on the next $2400 of annual earnings. Thus, the formula is weighted in favor of employees with low incomes. In the early years of the Federal social security program, which was enacted in 1935, the group annuity formula frequently provided for relatively large benefits from which the benefits from the Federal program were to be deducted to arrive at the net payment from the group annuity. Usually no distinction as between earnings appeared in the group annuity formula and, therefore, the total benefit from both programs, expressed as a percentage of earnings, did not vary by earnings. The non-uniform benefit formulas currently used in many group annuity plans have as their aim a total benefit which varies less by earnings classes than does the benefit under OASI.

Whether or not private retirement plans meet the legal requirements for permitting deduction of employer contributions for income tax purposes is determined by the Treasury Department. In general, one of the major requirements is that a plan must not give relatively higher total benefits (including old-age benefits under Federal old-age and survivors insurance) to higher-paid employees than to lower-paid employees. The Department has issued rules which naturally have influenced somewhat the selection of integrating benefit formulas. However, similar integrating formulas had been widely adopted before Treasury Department determination was required.

Table 17 gives data on coordination of the 376 group annuity plans with social security. The analysis is based on future service benefit formulas except for the money purchase plans where the contribution formula is used.* About 17% of the plans do not have any provisions for direct coordination with OASI, although it is probable that some, and perhaps most, of these plans would have had larger benefits if it were not for social security benefits.

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* In money purchase plans the employer's contribution bears a fixed relation to the employee's contribution; therefore it is not incorrect to assume that if the employee contributions are coordinated with OASI that benefits will also be coordinated in the same way.

Table 17.--Plans classified by methods of integration with old-age and survivors insurance

	(Future service benefits)	Number
1.	Formula changes at $3000 of earnings only.............	196
2.	Formula changes below and at $3000 earnings...........	32 a/
3.	Formula changes below $3000 earnings only.............	2
4.	Formula omits first $3000 earnings....................	32 b/
5.	Formula omits first $600 of earnings, changes at $3000..	12
6.	Formula omits first $600 of earnings and does not change at $3000..................................	5
7.	Formula omits first $1200 of earnings, changes at $3000..	3
8.	Miscellaneous...	3
9.	Total plans with non-uniform formula.......	283
10.	Future service formula makes no direct allowance for OASI......................	92
11.	Benefits are reduced by the amount of OASI benefits............................	1 c/
	Total........................	376
	(Past and future service benefits)	Number
12.	Benefits are reduced by OASI benefits, or the latter are considered in maximum or minimum benefit computations (these also appear in lines 9 and 11 above)	7
13.	Social security adjustment option (29 of these appear in line 10 above, the remainder in line 9).........	161

a/ The change below $3000 is made at $600 of earnings in 2 cases, $1200 in 14, $1800 in 12, $2400 in 1, and irregular points in 3 cases.
b/ One plan starts at $1800 for women.
c/ Benefits based on first $3000 of annual earnings only.

As shown in Table 17, the most frequently used form of integration provides relatively larger benefits on earnings in excess of $3000--found in 243, or 64%, of the plans. In addition, 32 plans omit all earnings below $3000 from benefit calculations, except that one plan starts at $1800 for women. In 17 plans, the first $600 of earnings per year is omitted in recognition of higher benefits from social security on the first $600 of earnings (5 of these have a uniform benefit rate with no change at $3000 of earnings) and 3 other plans omit the first $1200 of earnings. In 35 plans of the total (from lines 2, 7, and 8 of Table 17) the benefit rate increases after $1200, or some other portion, of yearly earnings below $3000.

The above analysis is for future service. Past service benefit formulas are more uniform. Only 71 plans, or 22%, give relatively larger benefits on amounts above $3000 of earnings. In addition, 30 plans omit earnings below $3000 and 20 plans omit earnings below $600 per year for past service benefit calculations. Only 1 formula changes to a higher benefit rate below $3000 only. The remaining 254 plans either have no direct coordination of their past service benefits with the OASI benefit formula, or do not give benefits for past service.

Another form of integration provides for offsetting the amount of social security benefits against the annuities purchased under the plan. Only 1 plan of the 376 had such a provision, and this provides benefits based upon the first $3000 only; under 6 others social security benefits are taken into account in the maximum or minimum benefit provisions.

One form of coordinating the incidence of benefits is called in many of the descriptive booklets, "Social Security Adjustment Option." This form of integration appears in 161 plans (43%). It provides that, in case of retirement before age 65, benefits may be adjusted so that the employee will receive approximately a level retirement income (including estimated OASI primary benefit payable after age 65) throughout retirement. 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 before age 65 than afterward. Three plans provide a temporary supplemental annuity approximately equal to OASI benefits for women from age 60, their normal retirement age under the plan, to age 65. Two plans out of 190 underwritten from July 1940 to July 1941 provided a similar supplemental annuity.

There seems to have been a trend away from specific integration of benefits of private plans with those of old-age and survivors insurance. In each of our previous studies less than 5%

of the plans covering employees also covered under old-age and survivors insurance had no integrating features, as contrasted with about 17% in this study. There has been an even greater decline in the more significant forms of integration--that is, offsetting for social security benefits and paying larger benefits on earnings over $3000. In previous studies, plans with the social security adjustment option for early retirement did not account for as large a percentage of the total as in this study. If this option is omitted from consideration, being a different type of meshing, about 24% of the plans provide for no direct integration in the future service benefit formula. Offsetting provisions seem almost at the vanishing point with only 1 "full offset" plan out of the 376. More plans have a uniform benefit formula (below and above $3000 of earnings) than in any of our earlier studies of plans underwritten since 1935. As previously mentioned, the social security benefits may have influenced the choice of a lower rate of benefit even under uniform benefit plans. There has been a sharp drop in the percentage of new plans which cover employees earning over $3000 only. About 13% of plans underwritten in 1939-42 covered employees earning over $3000 only; in the present study only 8% were of this type.

XI. SUMMARY OF OUTSTANDING TRENDS

The following table indicates some comparisons of the group annuities of this study with those of a previous study:

	1939-42 Study	This Study
Noncontributory	5%	42%
Money purchase	33	11
Covering only those earning $3000 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[a]	38	44
Provision for vesting	92	93
No integration of future service benefits with OASI (other than adjusted option only).........	5	24

a/Either through limitation of total annuity or of earnings used in benefit computation.

As to employee contributions, the most popular formula in previous studies was the same as in this study--2% on the first $3000 and 4% on earnings in excess of $3000. For the plans as a whole there was, in the earlier period, relatively a greater differential between the contribution rate on the first $3000 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. Where there is a uniform relationship, the average number of years of retirement benefits required for a full return of employee contribution is slightly over 2.5 years; the corresponding figure for an earlier period was 2.8 years. Under the contributory money purchase plans of the present study the average ratio of employer's contribution for future service to employee's contribution is higher than that shown in previous studies. A higher rate from employer than employee is called for in 62% of such plans, as compared with 16% of those written in the earlier period.

Formerly, more plans provided that benefits would be limited or reduced on account of social security payments to which a participant would be entitled. Of 190 plans underwritten July 1940-June 1941, 5% (9 plans) had an offsetting provision of some kind, whereas in the present study less than 2% (7 plans) have such a feature, and only 1 plan calls for a full offset. The social security adjustment option, which has the effect in case of retirement before age 65 of providing approximately level benefits (including the primary social security benefit) is mentioned in 43% of the booklets. Previous to 1942, few plans provided this option.

Table A.—Unit of annuity expressed as percent of earnings per year of credited service (311 plans)

Future service		Past service		Number of plans
First $3,000	Excess	First $3,000	Excess	
2%	2%	2%	2%	2
2	2	1 1/2	1 1/2	1
2	2	1	1	1
2	2	---	---	1
2[a]	---	1	---	1
1 1/2	2	1 1/2	2	1
1 1/2	2	1 1/2	1 1/2	1
1 1/2[b]	2	1 1/2[c]	1	1
1 1/2[d]	2	1[b]	1	1
1 1/2	1 1/2	1 1/4	1 1/4	1
1 1/2[b]	1 1/2	1[b]	1	5
1 1/2	1 1/2	3/4	3/4	1
1 1/2	1 1/2	---	---	1
1 1/3[e]	1 2/3	1	1	2
1 1/4	2 1/2	1 1/4	1 1/4	1
1 1/4	2	1	1 1/2	2
1 1/4[f]	1 3/4	1[b]	1	1
1 1/4	1 1/4	1 1/4	1 1/4	1
1 1/4	1 1/4	1	1	1[b]
1 1/4	1 1/4	---	3/4	1
1 1/5	2	---	---	1
1 1/8[g]	1 1/2	3/4[g]	3/4	1
1	2	1 1/2	1 1/2	1
1	2	1	2	4
1	2	1	1 3/4	1
1	2	1	1 1/2	1
1	2	1	1	18
1	2	1	3/4[h]	1
1	2	3/4	1 1/2	1
1	2	3/4	3/4	2
1	2	5/8	1 1/4	1
1	2	3/5	4/5	1
1	2	1/2	1	1
1	2	1/2	1/2	1
1	2[i]	---	---	8
1[j]	1 3/4	7/8	7/8	1
1	1 3/4	1	1 1/2	1
1	1 3/4	3/4	1 1/4	1[b]
1	1 1/2	1 1/4	1 1/4	1[b]
1[k]	1 1/2	1 1/5[b]	1 1/5	1
1	1 1/2	1	1 1/2	2
1	1 1/2	1	1	21[l]

See footnotes at end of table.

(Continued)

Table A.--Unit of annuity expressed as percent of earnings per year of credited service (311 plans)--continued

Future service		Past service		Number of plans
First $3,000	Excess	First $3,000	Excess	
1	1 1/2	3/4	1 1/8	1[m]
1	1 1/2	3/4	1	2
1	1 1/2	3/4	3/4	4[n]
1	1 1/2	3/7	5/7	3[o]
1	1 1/2	2/3	1	1
1	1 1/2	2/3	2/3	1
1	1 1/2	1/2	1	1
1	1 1/2	1/2	3/4	1
1	1 1/2	1/2	1/2	1
1	1 1/2	---	3/4	1
1	1 1/2	---	---	1
1	1 1/3	1[b]	1 1/3	1
1	1	1	1	24[f]
1	1	.85	.85	1
1[b]	1	3/4[b]	3/4	12
1[b]	1	1/2[b]	1/2	5
1	1	---	---	2
1	---	3/4	---	1
15/16	1 1/8	3/4	3/4	1
7/8	7/8	5/8	5/8	1
5/6	1 1/6	5/6	1 1/6	1[b]
4/5	1 3/5	1/2	1	1
4/5	1 1/2	1/2	1/2	1
3/4	1 3/4	3/4	1 1/2	1
3/4	1 3/4	2/3	1 1/3	1
3/4	1 1/2	1	1	8
3/4	1 1/2	3/4	1 1/2	8[p]
3/4	1 1/2	3/4	1	8[q]
3/4	1 1/2	3/4	3/4	36[r]
3/4	1 1/2	2/3	1	1
3/4	1 1/2	2/3[b]	1	3
3/4	1 1/2	1/2	1	4
3/4[s]	1 1/2	1/2	3/4	4
3/4	1 1/2	1/2	1/2	12
3/4	1 1/2	---	---	1
3/4	1 1/4	3/4	3/4	1
3/4	1	3/4	3/4	3
3/4	1	1/2	1	1
3/4	3/4	3/4	3/4	3
3/4	3/4	1/2	1/2	2
3/4[b]	3/4	---	---	1
3/4	---	2/5	---	1
2/3	1 1/2	1/2	1	1

See footnotes at end of table. (Continued)

Table A.—Unit of annuity expressed as percent of earnings per year of credited service (311 plans)—Continued

Future service		Past service		Number of plans
First $3,000	Excess	First $3,000	Excess	
2/3%........	1 1/3%......	2/3%........	1 1/3%.......	1
2/3..........	1...........	2/3.........	2/3..........	1
2/3..........	2/3.........	2/3.........	2/3..........	1
3/5..........	1 1/5.......	3/5.........	4/5..........	1
9/16[t].......	1 1/8.......	9/16........	3/4..........	1
1/2..........	1 1/2.......	---	---	1
1/2..........	1...........	1/2.........	1............	2
1/2..........	1...........	1/2.........	1/2..........	3
1/2[u]........	4/5.........	1/2[u].......	4/5..........	1
1/2..........	1/2.........	3/4.........	3/4..........	1
1/2..........	1/2.........	1/2.........	1/2..........	3
1/2..........	1/2.........	---	---	2
---	1 1/2.......	1[b].........	1 1/2........	1
---	1 1/2.......	---	3/4..........	12[v]
---	1 1/2 + $24.	---	1/2 + $12....	1
---	1 1/2.......	---	3/8..........	2
---	1 2/5.......	---	1............	1[w]
---[x]	1 2/5.......	---	3/4..........	2
---	1 1/4.......	---	3/4..........	2
---	1 1/4.......	---	---	1
---	1...........	---	1............	1
---	1...........	---	3/4..........	4

a/ Offset of primary social security benefit, but minimum exclusive thereof $120 annually.
b/ First $600 disregarded in 1 plan.
c/ 1½ percent to $1500; 1¼ percent, $1500 to $2500; in excess 1 percent.
d/ $9 on first $1200 or less.
e/ $12 for future service on first $1695 or less in 1 plan.
f/ ½ percent to $600 in 1 plan.
g/ 1/8 percent on first $600.
h/ 1 percent to $4000; ¾ percent above.
i/ 1⅔ percent for women in 1 plan.
j/ $12 on first $1800 or less; 1 percent $1800 to $3000.
k/ 1¼ percent on $1200 to $3000.
l/ First $600 of earnings disregarded in 4 plans; $6 for future service first $1200 or less in 1 plan.
m/ $7.50 for future service benefits first $1350 or less—all benefits reduced by 4 percent.
n/ First $600 disregarded for future and past service in 1 plan; for future service only, 1 plan.

(Footnotes continued)

Table A.--Unit of annuity expressed as percent of earnings per year of credited service (311 plans)--Continued

o/ First $600 disregarded in all plans.
p/ 1 percent on $1200 to $3000 for future and past service in 2 plans and on $1200 to $3000 for future service in 3 additional plans.
q/ 1 percent on $1200 to $3000 for future service in 1 plan and on $1800 to $3000 in 2 plans.
r/ First $600 of earnings disregarded for past and future service in 1 plan and for past service in another; 1 percent for future service $1200 to $3000 in 2 plans.
s/ 1 percent on $1200 to $3000 in 1 plan.
t/ $\frac{3}{4}$ percent on $1200 to $3000.
u/ 4/5 percent above $1500.
v/ 1 plan provides an additional $10.80 annually per year of future service and $5.40 per year of past service.
w/ First $3600 disregarded (railroad employees).
x/ 1 plan covers women earning $1800 or more, with minimum annual benefit $8.40 per year of service.

Table B.--Vesting provisions

Complete vesting

Plans with deferred complete vesting conditioned on--

I. Service only:

Years	Plans
1	1
2	1
5	9
7	2
10	16
15	14
20	10
Total plans	53

II. Participation only:

Years	Plans
1	2
3	2
5	19
10	a/ 13
15	3
20	2
Total plans	41

a/ 1 on these vests 50% of the future service annuity and past service already purchased--never becomes complete.

III. Age and service:

Age	Service in years 5	10	15	20	25	Total
	Plans					
35	1	--	--	--	--	1
40	--	12	1	--	--	13
45	3	8	9	1	--	21
50	--	a/7	a/11	2	--	20
55	--	2	7	5	1	15
60	--	--	--	1	--	1
Total	4	29	28	9	1	71

a/ 1 of these stipulates 5 years earlier for women.

IV. Age and participation:

Age	Participation in years 5	10	15			Total
	Plans					
40	--	1	--	--	--	1
45	4	2	2	--	--	8
50	1	2	--	--	--	3
55	1	2	--	--	--	3
Total	6	7	2	--	--	15

V. Service and participation:

Service	Participation	Plans
Years		
7	5	1
10	2	1
10	5	3
11	5	1
15	5	12
20	5	5
20	10	2
Total plans		25

VI. Service, participation, and age:

Service	Participation	Age	Plans
Years			
10	5	40	3
10	5	45	1
10	5	50	2
10	5	55	1
10	5	60	1
15	5	40	1
15	5	45	2
15	10	40	1
20	5	55	4
25	5	55	1
Total plans			17

VII. Age only:

	Plans
Age 55a/	4
Within 5 years of retirement	1
Total plans	5

a/ 1 of these stipulates age 50 for women.

Table B.--Continued

Graded vesting

Plans with graded vesting conditioned on--

I. Service only:

Vesting completed in--(years)	Vesting begins with service of--(years)							
	2	3	5	6	8	10	15	Total
	Plans							
10......	1	1	4	-	-	-	-	6
13......	-	-	-	-	1	-	-	1
15......	-	-	-	1	-	2	-	3
20......	-	-	7	-	-	9	-	16
25......	-	-	2	-	-	-	a/ 1	2
30......	-	-	-	-	-	-	-	2
Total...	1	1	13	1	1	13	1	31

II. Participation only:

Vesting completed in--(years)	Vesting begins with service of--(years)						
	3	5	10				Total
	Plans						
10......	1	3	-	-	-	-	4
15......	-	2	3	-	-	-	5
20......	-	9	2	-	-	-	11
25......	-	2	4	-	-	-	6
28......	-	1	-	-	-	-	1
30......	-	-	1	-	-	-	1
Total...	1	17	10	-	-	-	28

a/ Vest 90% of future service and all past service already purchased.

III. Combinations of age or service or participation:

	Plans
Begins age 40, 10 years' service, complete at 15 years' service.............	1
Begins age 45, 5 years' service, complete at 20 years' service...............	1
Begins age 45, 5 years' participation, complete at 10 years' participation...	1
Begins age 50, 5 years' service, complete at 15 years' service...............	1
Begins age 35, 10 years' service, complete age 45, 20 years' service.........	1
Begins age 40, 10 years' service, complete age 50, 20 years' service.........	2
Begins age 40, 10 years' service, complete age 55, 15 years' service.........	1
Begins age 45, 10 years' service, complete age 50, 15 years' service.........	1
Any age, 20 years' service vests 50%; complete at age 50 men, 45 women with 15 years' service...	1
Begins 5 years' participation, 15 years' service, age 50; complete 10 years' participation, 20 years' service, age 55...........................	1
Begins 5 years' participation, 5 years' service, complete 25 years' service..	1
Begins 5 years' participation, 10 years' service, complete 9 years' participation, 17 years' service.....................................	1
Total plans..	13

Table B.--Continued

Miscellaneous (both complete and graded vesting)

I. Plans which vest as to future service benefits only:

	Plans
10 years' participation under age 45, 5 years' participation above age 45...	2
10 years' service....................................	1
5 years' service, age 40....................................	1
10 years' service, age 45....................................	1
5 years' service, age 55....................................	1
5 years' participation, age 45....................................	3
Begins 10 years' service, complete 35 years' service....................	1
Total plans....................................	10

II. Plans with different conditions for vesting of future and past service benefits:

Future service:	Past service:	Plans
5 years' participation....................	10 years' participation..........	2
5 years' participation, age 55 men (50 women)....................	10 years' participation, age 55 men (50 women)................	1
5 years' participation....................	20 years' service................	1
10 years' service....................	Age 55 and 10 years' service.....	2
Age 55....................................	Age 55 and graded from 10% at 10 years' service to 100% at 30 years' service............	1
5 years' participation....................	5 years' participation, 15 years' service and age 45 or 5 years' participation, 10 years' service and age 55...........	1
Age 40-44 vests 1/3; 45-49, 2/3; 50 and over, 100%..........................	Age 55..........................	1
Total plans....................................		9

III. Plans with alternative conditions for vesting:

	Plans
Examples: (not feasible to classify) (1) Age 50 or 10 years' service. (2) Age 55 and 25 years' service or age 60. (3) Age 40, 10 years' service or 15 years service, any age (4) 5 years' participation, 20 years' service or 5 years' participation, age 50 or age 55 in case of disability.	
Total plans....................................	26