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... PENSION PLANNING IN THE LIGHT OF CURRENT TRENDS—II

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INTRODUCTION

This memorandum is a continuation of Industrial Relations Memos, No. 111. Sections A-E of that memorandum dealt with trends in pension provisions relative to plan coverage, eligibility for membership, the question of employee contributions and the funding of pension plans. The scope and intent of the study that is the basis for this series of memorandums is explained in Section A. For understanding of some references made in this section, the following excerpt from the introduction to the preceding memorandum is repeated here:

The method of presentation is (1) to give the analysis of the basic provisions of the plans in the present study, (2) to compare these results with those of our 1938 study, and then (3) to test the reality of any apparent trend by reference, first, to the changes made in any of these plans since 1938, and, second, to the characteristics of the sixty-three most recent plans established from 1946 to 1948. In connection with certain questions, reference is also made to the provisions of the 161 new plans installed between 1942 and 1945.

One final memorandum will be issued subsequently, concluding this analysis of plans as they existed in 1948. No effort is made to take account of the terms of the better known plans recently negotiated by collective bargaining since the situation is still in flux. But the present analysis does give a background for the evaluation of these newer types.

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## CONTENTS

	<u>Page</u>
F. HOW SHOULD BENEFITS BE DETERMINED? . . . . .	1
1. Level of Adequacy . . . . .	1
2. Relationship to Earnings and Length of Service . . . . .	1
3. Simplicity of the Benefit Formula . . . . .	2
4. Fixed Benefit Versus Money Purchase Method . . . . .	2
a. Points of Difference in the Two Methods . . . . .	2
b. Relative Merits of Both Methods . . . . .	3
c. Prevalence of Fixed Benefit Plans . . . . .	6
5. Average, Final or Final Average Earnings Base . . . . .	7
6. Past Service Credits . . . . .	8
7. Maximum and Minimum Benefits . . . . .	9
8. Integration With Federal Old Age Benefits . . . . .	10
9. Type of Retirement Income . . . . .	13
10. Benefit Statistics . . . . .	15
a. Current Service Benefit Formulas . . . . .	15
b. Past Service Benefit Formulas . . . . .	18
c. Maximum Benefit Provisions . . . . .	19
d. Minimum Benefit Provisions . . . . .	21
e. Average Pension Benefits . . . . .	22

## PENSION PLANNING IN THE LIGHT OF CURRENT TRENDS—II

### F. HOW SHOULD BENEFITS BE DETERMINED?

#### 1. Level of Adequacy

No pension plan can achieve its objectives unless it provides adequate benefits. But there is no ready yardstick to measure "adequacy." Even if there were, what might have seemed reasonably adequate in anticipation may prove inadequate in realization, because of changed circumstances. The possible changes in circumstances that may thus upset well-laid plans include changes not only in such objective factors as wage levels and the cost of living but also in such subjective factors as standards of living and prevailing notions about what is necessary, right, proper, reasonable or decent as a retirement income. Adequacy is a very elusive concept.

About all that can be said is that benefits must be large enough to enable a company to retire its superannuated employees without any adverse reaction from other employees or the community. Benefits, in other words, must be large enough to make elderly employees, if not positively willing to retire, at least willing to acquiesce in the termination of their service without any sense of grievance and with some realization that the company has made as generous provision for retirement as could be reasonably expected.

Prevailing opinion, supported by experience under many plans, is that this desirable minimum requirement is to provide for the typical employee, after twenty-five or thirty years' service, an amount of pension which when added to federal old age benefits will afford a total retirement income of approximately 50 per cent of his final earnings. This standard may indeed derive from an unstated assumption that half a loaf is better than none. But it is based also on a conviction that much less would not be acceptable to employees and that much more might well be too burdensome to employers. It assumes rightly that expenses for most employees at retirement age will have been somewhat reduced—the children may then be self-supporting and the mortgage on the home may have been paid off—and that employees should be expected, despite all the known difficulties, to have accumulated some minimum savings themselves.

#### 2. Relationship to Earnings and Length of Service

It is almost standard practice to relate an employee's pension to his earnings and length of service. This method gives equitable treatment to each employee by fixing his pension in due proportion to the extent of service he has rendered to the company, which is measured by the wages he has received and his years of employment.

Current demands for flat pensions unrelated to earnings and length of service (or conditioned only on satisfying some minimum service requirement) have the virtue of simplicity. Union members can be roused to fight for pensions of \$100 or \$150 per month, while they would be left puzzled and cold by a proposal which expresses pensions in percentages that vary according to the amount of earnings to which they apply and as to whether they are for past service or future service. Flat pensions aim at a minimum standard of adequacy. But they discriminate against long-service and higher paid workers and thus run counter to the average employee's instinctive sense of equity. Certainly no company has the same responsibility to provide for the old age of a worker after only a few years of service that it has for a worker of twenty or thirty years' service. Flat pensions, under company plans, are not consistent with the growing belief—which alone gives any semblance of logic to our overall social security program—that it is the function of government to prescribe or provide minimum pensions and the function of private plans thereafter to provide such variable supplements as equity for all employee groups may suggest and as the means of employers and employees will permit. Flat pensions may be appropriate under government plans, as in Great Britain and New Zealand but not yet in the United States. Until the recent drive for "\$100 per month" pensions, they had no recognized place in private pension planning.

It is also of some importance to note that relating pensions to earnings and length of service encourages the orderly financing of pensions year by year.

### 3. Simplicity of the Benefit Formula

In pension plans—as in so much else—simplicity is a major virtue. No plan can achieve its full industrial relations objective unless employees really understand it. Without understanding there can be no appreciation. Legal, actuarial and other technical considerations necessitate some unavoidable complexities, but a vigorous effort should be made to minimize them. Of two approximately equivalent provisions the simpler is nearly always the better.

This approach is especially applicable in devising the benefit formula. In striving to provide equitable benefits, geared to earnings and length of service, a too complicated formula should be avoided. Employees may fail to become enthusiastic about a pension plan in which the distinctions are difficult to comprehend and to translate into the amount of pension the individual may expect.

### 4. Fixed Benefit Versus Money Purchase Method

a. Points of Difference in the Two Methods: Given the general target of a pension plan there are two main ways to try to hit it, by the fixed benefit method and the money purchase method. The first fixes the amount of benefit and hopes that the company will be able to meet future contributions. The second fixes contributions at a tolerable level and hopes that they will prove sufficient to produce the requisite benefits.

Under the fixed benefit method (also called "definite benefit," "unit of benefit" or "unit annuity"), pensions are determined as (1) a specified percentage of the employee's earnings multiplied by his years of credited service, or (2) a flat amount, say, \$5 per month, for each year of credited service, or (3) a flat percentage of salary, or (4) exceptionally, a flat pension amount for each employee. In the first type—percentage of earnings times years of service—which is the most usual, the percentage may be applied to the employee's average earnings during his years of participation or to his final earnings just prior to retirement or to his final average earnings, i.e., his average during his final five or ten years of service. The percentage may be varied on specified parts of employee earnings (for example, 1 per cent on the first \$3,000 and 1 1/2 per cent on the balance). It may also be varied as between employee groups. The earnings base may be actual earnings or it may be arrived at by the use of salary classifications or brackets (such as, 1 per cent of \$2,000, or \$20, for those earning from \$1,900-\$2,099). It may but usually does not include overtime or bonuses or other special payments. The cost of fixed benefits varies according to the age and sex distribution of employees. Fixed benefit plans may be insured or trusteed, contributory or noncontributory.

Money purchase plans start the other way round. Contributions, usually but not necessarily from both employer and employees, are fixed as a percentage of pay, varying sometimes as between different segments of pay or age groups or employee groups. The resulting pensions are whatever amounts such contributions will purchase on the basis of the applicable current annuity premium rates. Money purchase plans are almost invariably but not necessarily insured and the great majority are contributory. When the rates of contribution are determined, the costs are ipso facto fixed, and it is the amounts of benefits that vary according to the age and sex distribution of employees. The contributions will buy progressively smaller annuities specifically as each employee ages, and generally as mortality improves or interest rates fall.

b. Relative Merits of Both Methods: The major disadvantage of fixed benefit plans (either without employee contributions or with fixed employee contributions) is that all unforeseeable increases in pension costs fall upon the employer. The correlative advantage is that every employee, if able to guess future earnings and service with reasonable accuracy, can look forward to a definite benefit (if the financial circumstances of the company continue to permit it). The major advantage of money purchase plans is that the employer is protected against increases in pension costs and the employee thus has a slightly greater assurance of receiving some pension. The correlative disadvantage is that the amount of the employee's future pension is uncertain, since increases in costs may result in decreased annuities.

As indicated in the earlier memorandum of this series (No. 111, Section E, 5,a), general increases in costs result from two major factors, decreases in interest rates and improvements in mortality. If the interest rate decreases one-half of 1 per cent, that increases the cost of \$1 of annuity about 15 per cent, on the average. The decrease in interest rates that has actually occurred—from around 4 per cent some twenty years ago to the now generally prevailing rate of about 2 or 2 1/4 per cent—has increased the cash outlay for pensions during that period by more than 50 per cent.

Mortality experience has accentuated the general increase in pension costs. According to the Combined Annuity Table of 1927, 69.8 per cent of males aged forty would survive to age sixty-five; according to the Standard Annuity Table of 1937, this figure had then increased to 73 per cent. In the 1927 table the male expectation of life at sixty-five was 12.74 years; in the 1937 table, it was 14.4 years. Furthermore, mortality has been "rated down" further since 1937 and most actuaries now use the Standard Annuity Table rated down by one or two years, the so-called first or second modifications, which treat everyone as living one or two years longer, respectively, than the table indicates. These more conservative mortality assumptions imply that more employees will live to retirement age and that each of these will draw a pension for a longer period, thus obviously increasing pension costs.

The combined effect of these factors is indicated by the change in the group annuity rates of one large insurance company. In 1930 the single premium cost for an immediate, straight life annuity of \$1,200 per year for a man aged sixty-five was \$11,263; in 1950 it is \$15,824. If a deferred annuity of the same amount, payable at age sixty-five, had been bought for him at age forty in 1930, it would have cost \$3,276, but today it would cost \$6,823.

The particular cost of a fixed benefit plan to a given company will increase also if the average age of employees increases. Increasing average age has been an important factor in some companies, depending on turnover and the rate of growth or decline of the operations, and is, therefore, a possibility that must be taken into account in planning, but it is apparently a less important cost item than the general trend in interest rates and mortality.

The problem of pension planning is to strike a balance between the costs it is safe to assume and the benefits believed to be necessary. Most companies face the retirement problem reluctantly and are loath to assume the apparently heavy costs of a pension plan until they are thoroughly convinced of its industrial relations and economic values. Initial plans are therefore often prepared on the basis of minimum or less than minimum adequacy. In general, companies tend to look first for a low cost plan and second for protection against possible increases in future costs. To managements in this frame of mind money purchase plans, although in themselves not "cheaper," have an obvious appeal, and in the thirties there was a noticeable trend toward this kind of plan. Today, however, when it is reasonable to hope that interest rates are unlikely to fall any further and that mortality assumptions are on a conservative basis,<sup>1</sup> the major hazards leading to increased pension

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Some allowance must be made for continued improvement in mortality, but when it is said, for example, that the life span in the United States increased from 49.2 years in 1900 to 66.8 years in 1947 and to 67.2 years in 1948, it must be remembered that a very large part of the increase in the average duration of life has come hitherto from improved expectancy in the lower age groups. On the other hand, the medical profession is just beginning to train its batteries on the problems of aging (gerontology) and the treatment of the aged (geriatrics), and it is possible that at any time the discovery of a specific remedy for such killers as cancer or heart disease might significantly increase the life expectancy of the older age groups. Any such happy development would greatly increase pension costs.

costs are appreciably reduced. The advantages of money purchase plans and the possible disadvantages of fixed benefit plans are both greatly modified, and the trend is now clearly toward the latter kind of plan.

The apparent simplicity of fixed benefit plans makes it possible for employees to understand the central feature about which they care—"What do we get?" Money purchase plans are difficult to explain to employees. From the point of view of industrial relations effectiveness the argument for fixed benefit plans is therefore overwhelmingly strong. Of course, in the case of companies on which fixed benefit plans would impose greater cost burdens than they could continue to carry, the money purchase method offers a safer and perhaps the only course for those managements to take.

A pension plan can facilitate orderly retirements only if the pensions are a reasonably adequate percentage of final pay. Fixed benefit plans are better adapted than money purchase plans to assure this desired relationship. Take, for example, two plans under which an employee contributes 5 per cent of earnings. When at age sixty the employee's salary has increased to \$5,000 per year, the money purchase plan says to him: "You will contribute \$250, the employer will contribute, say, \$375 and for this year's service you will be entitled to whatever deferred annuity at age sixty-five \$625 will now buy for you. In 1950 this will buy a modified cash refund annuity of \$53.75 per year." But the fixed benefit plan says to him: "For this year's service you will be entitled at age sixty-five to an annuity of \$75 per year, or 1 1/2 per cent of your salary. This will now cost \$852.25. Since you are paying \$250 the company will contribute the necessary balance of \$602.25." It should be noted, however, that this adjusts only the annuity based on that single year's service to current salary. We shall consider the problem of adjusting the total annuity for all years of service to final salary in Subsection 5 below.

Another consideration is that most plans give credit for service rendered before the effective date of the plan. The employer invariably pays the total costs for such service, usually over a period of years, and generally grants the credit on the basis of a fixed benefit formula. Even though the money purchase principle may be followed for current or future service contributions, most pensions during the initial years of such plans are therefore based partly on a money purchase formula and partly on a fixed benefit formula. Accordingly, until the past service obligation has been paid, the concept of the money purchase method fixing the employer's liability in a specific ratio to employee contributions does not wholly apply.

Despite the strong case for fixed benefit plans, it must be remembered that pensions are expensive, and money purchase plans have an element of safety that may well be necessary in companies that suffer from extreme fluctuations in employment and profits, or in which labor costs represent an unusually high proportion of the sales dollar, or which face tough union negotiators. Of course, in a static world technicians could devise plans to achieve any given result by either the money purchase or the fixed benefit method. It is true also that money purchase plans could be adapted to changed circumstances by increases in employee contributions that would be logically defensible but not realistic. But these possibilities do not

detract, under current conditions, from the strength of the case, in favor of fixed benefit plans.

Unfortunately, the strong case for fixed benefit plans, as the best method of providing genuine old age security for employees and thus of accomplishing certain management objectives, must be qualified in relation to some collective bargaining situations. When a pension plan is forced on a company solely by union pressure and, more particularly, when such a plan is perhaps unfunded and makes promises which cannot be fulfilled, the costs of the plan cannot be justified on the basis of its industrial relations values. No one gets credit for doing what everybody else does, although one may incur obloquy for failing to conform. Except perhaps over a very long period, few employers get "credit" or positive improvement in employee motivation for compliance under duress with a pension "pattern" established by union power. When, therefore, employers are forced to concede demands, such as those during the 1949 strike in the steel industry, for "a cash wage equivalent" of so many cents per hour for pensions, their safest course may be to stick to the money purchase principle. They should make whatever concession is unavoidable, strictly in the form of cents per hour or other specified contributions, without any commitment about the benefits these contributions will buy at some future date.

Apparently, the Ford Motor Company, in its somewhat unintelligible preliminary pension agreement of September, 1949, confused the money purchase and fixed benefit principles. It seemed to promise to pay both contributions of not more than 8 3/4 cents per hour and also benefits to fully eligible employees of not less than \$100 per month, including federal old age benefits. It could do one or the other but not, except by chance, both simultaneously. In this respect, the Kaiser Steel Company was much more realistic in standing firmly on the money purchase principle, saying in effect "We concede contributions of 6 cents an hour. We do not know what benefits this amount will eventually purchase. That is your problem and the problem of your actuarial representatives."

The remarks in the two preceding paragraphs have, of course, little application to any situation where bargaining about pensions proceeds realistically, in good faith, and on a factual basis.

c. Prevalence of Fixed Benefit Plans: Of the 347 plans studied in 1938, 282, or 81 per cent, were fixed benefit, and sixty-five, or 19 per cent, were money purchase. These ratios have not changed very much, since of the 558<sup>2</sup> plans in the current study 465, or 83 per cent, are fixed benefit, and ninety-three, or 17 per cent, are money purchase. It is noteworthy, however, that since 1938 only one plan changed from a fixed benefit to a money purchase basis, while twenty-eight discarded the money purchase principle and adopted the fixed benefit method. Further, all of the sixty-three plans established in 1946-1948 were of the fixed benefit type.



## 5. Average, Final or Final Average Earnings Base

The ultimate test of a pension is its relationship to the retired employee's final pay. Does the pension, in addition to federal old age benefits and supplemented we hope by some other resources, provide a large enough substitute for his earnings immediately prior to retirement to enable him to live in reasonable dignity and comfort? It may well be questioned, especially for low paid employees, whether the requisite minimum previously suggested of 50 per cent of final pay is really adequate. Nevertheless, having selected that as our target, it is necessary to realize that it is not easy to hit.

The most direct approach would be to base future service pensions on final pay. If a plan promised 2 per cent of final pay for each year of service then every employee of twenty-five or more years of service would receive at least the suggested minimum. If the percentage benefit rate were lower it would take longer service to achieve this minimum. The point at issue is obvious—that on this basis the pension is at least geared to final pay.

The catch in this method is that final pay is unpredictable. The normal increases in earnings which average employees can expect with increased service, up to a point at least, can indeed be estimated within tolerable margins of error, but no actuary can predict the future course of the general level of wages and salaries. Necessary account could be taken even of this factor if the general upward trend continued at a reasonably even rate. But if there is to be an inflationary upsurge in wage and salary rates every twenty years or so, the use of final pay as the pension basis makes it almost impossible to estimate pension costs and to provide for orderly financing of current pension liabilities as they accrue. Specifically, in 1950 pensions based on final pay of \$3,000 (as a rough approximation of average annual earnings of wage earners in some manufacturing companies) would on this basis have to be paid out of funds accumulated over thirty years, during twenty-five of which contributions were set aside with respect to earnings averaging, say, only \$1,200 to \$1,500.

Contributions based on earnings of \$1,500 can never pay for pensions based on earnings which unexpectedly rise to \$3,000. Conservative policy is, therefore, to base pensions on average earnings, i.e., to set aside each year enough to provide a unit of pension based on that year's earnings. If life-time earnings rates were reasonably level there would, of course, be no significant difference between pensions based on final and those based on average earnings. But in our unstable economic world there is sure to be a discrepancy between the planned percentage of average pay and the realizable percentage of final pay. In certain periods like the present, the discrepancy can be large enough to defeat the whole purpose of a pension plan. This may be the major dilemma in pension planning. If your financing is conservatively systematic your benefits may be inadequate. If you guarantee adequate benefits your foresighted financial arrangements may prove less than sufficient.

An attractive compromise is to base pensions on average earnings during some period, such as the last five or ten years, immediately prior to retirement. This gives the employer some protection against excessive costs,

in that at the present time, for example, such pensions would be based not on peak earnings of 1950 but on the somewhat lower average earnings of 1940 to 1950, perhaps on \$2,200 instead of a lifetime average of \$1,700 or a final average of \$3,000. This method not only gears pensions more closely to final pay but it gives special protection to those employees whose earnings may decline, for individual reasons, over a few years prior to retirement. It has all the merits and demerits of any compromise program.

By definition there is no escape from a dilemma, and not much choice between its horns. Sound policy, nevertheless, would seem to call for conservatism—to base pensions on average pay, thus to meet accruing liabilities currently but to do so with a realization that it probably takes a pension of from 70 to 80 per cent of average pay to produce about 50 per cent of final pay. Few current plans achieve this goal, which an employee can reach only by thirty-five years' service under a 2 per cent plan.

In 1938, 255, or 90 per cent, of the 282 fixed benefit plans used average pay as the basis for future service benefits; twenty-two, or 8 per cent, used final or final average pay; five plans provided flat pensions. In the current study, 390, or 84 per cent, of the 465 fixed benefit plans use average pay; forty-six, or 10 per cent, use final or final average pay; twenty-six, or 6 per cent, provide flat benefits. With one exception, which used the average of the final five years' pay, all the sixty-three plans established in 1946-1948 used the average pay basis.

## 6. Past Service Credits

Little specific reference has been made heretofore to the fact that, since pension plans are practically never started when a business is first established, benefits are customarily divided into those for "current" or "future" service and those for "past" or "prior" service, i.e., for service rendered before adoption of the plan. Such past service benefits are almost essential to provide anything like adequate pensions for older employees who have relatively few years of future service in which to accumulate pension credits. While the long-run effectiveness of a pension plan is measured by the adequacy of its future service benefit formula, most managements must devise a plan that will also facilitate the retirement of that group of employees whose efficiency has already been reduced by age, or soon will be, below the point necessary for competitive production. Moreover, regardless of long-range values, active employees tend to judge a pension plan by the treatment it affords those employees who are currently being retired. Obviously, therefore, an employer can obtain the maximum return from the money spent on a pension plan only if he provides reasonably adequate credit for service prior to the effective date of the plan.

The usual practice is for the employer to bear the full cost of this part of the pension program, and to grant past service credit on a fixed benefit basis (such as 1 per cent of the employee's earnings rate on the effective date of the plan, or three-fourths of 1 per cent of the first \$3,000 per year plus 1 per cent of the excess over \$3,000 for each year of service). Usually, lower percentage credits are specified for past than for future service. This system may be primarily to reduce costs but can be

justified by the fact that past service benefits are usually based on current earnings or relatively current average earnings at the time of plan installation, which are almost invariably higher than previous earnings actually were. Basing past service credits on current earnings helps to adjust the retirement income of older employees to current living costs. Using lower percentages for past service credit eases the financial burden on the employer and therefore permits him for any given total expenditure to provide relatively larger benefits for future service, which is specially important if employees are being asked to contribute.

The cost of assuming, at one bite, the liability for past service credits, which at best are never too generous, is often the major obstacle to the adoption of a pension plan, and many devices are used to reduce the obligation and facilitate its liquidation. The most usual of such devices is the introduction of age and/or service requirements of the sort discussed generally in the preceding memorandum of this series (No. 111, Section C). Usually the same age and/or service requirements are applicable to both past and future service credits.

Parenthetically, it should be mentioned that comparison and evaluation of the past service formulas of different plans is unusually difficult, because the significant differences are less in the percentages used than in the earnings bases to which the percentages are applicable. Two plans, each providing a 1 per cent benefit for each year of past service, will produce fundamentally different results if in one the earnings base is 1937 while in the other it is 1947. One of the most frequent methods of liberalizing a pension plan is to revise the past service formula to make the given percentages applicable to average earnings of a more recent date.

The special problem of funding the liability for past service will be touched on briefly in connection with a discussion of contributions which will appear in a subsequent memorandum of this series.

## 7. Maximum and Minimum Benefits

If benefits are related to earnings and length of service all employees are given the same relative treatment and there is no logical justification for setting a maximum limit on retirement incomes at one end of the scale or for providing a minimum at the other.

Nevertheless, in 338 of the 550 plans studied maximums are imposed, either by a straight limitation on the pension payable or by setting a limitation on the earnings credited for pension purposes. Some have been introduced on the initiative of top executives to reduce pension costs, or to avoid a possible criticism that they were sponsoring a plan largely in their own selfish interest, or to forestall the adverse public relations results that sometimes follow the announcement of the retirement of an executive on a large pension, which, although not disproportionate in relation to salary, may strike the man in the street as unreasonably generous. A pension of \$90,000 per year, as recently announced for the ex-president of a large company, somehow seems to raise more questions in the public mind than does the level of salary on which it was based.

Many maximums have developed from the group annuity underwriting rules of certain insurance companies. These used to limit the annuity that could be purchased for any employee according to the number of eligible employees and the average salary of the fifty highest paid. Some companies have recently changed their rules to eliminate this restriction, and there is reason to believe that others are prepared to waive it.

Maximum benefits have been prescribed in some plans in order also to meet the requirements of the Bureau of Internal Revenue to qualify a plan as not being discriminatory in favor of higher salaried employees.

Minimum benefits are provided in 107 of the plans studied. By assuring certain employees larger benefits than the basic formula of the plan would provide, minimum benefit provisions discriminate in favor of short-service employees, especially in low earnings classes. They are intended to avoid the anomaly of paying benefits in amounts that would be of little help in meeting the subsistence requirements of retired employees. Many companies with plans that are adequate or even generous for long-service employees have recently been embarrassed by the adverse employee and public reaction resulting from retirements, especially of elderly employees hired during the war period, on pensions which seem trivial in relation to needs. The reaction is not tempered by the perfectly reasonable answer that no one should expect to earn an adequate pension on the basis of eight or ten years' service with one company. A substantial number of companies, therefore, have almost been forced by circumstances to let practical considerations override the policy of even-handed equity and in such cases have informally supplemented the pensions payable under the terms of their plans, to bring them up to higher or newly established minimums. The force of the pressure in this direction is most clearly seen in frequent provision of a minimum of \$100 a month including social security (but usually only after twenty-five or thirty years of service) in recently negotiated pension plans. Although a minimum pension provision impairs the symmetry and equity of a pension plan, such a provision, either as part of the plan itself or as an informal supplement to the plan, may prove in practice to be unavoidable.

#### 8. Integration With Federal Old Age Benefits

The suggestion that a reasonable objective should be to provide pensions which, in addition to federal old age benefits, will be about 50 per cent of final earnings immediately raises the question of how a private pension plan should take account of employees' prospective retirement benefits under social security. There are two ways to do so: directly, by deduction of social security benefits in whole or part from the plan benefits or, indirectly, by "integration."

The earliest and most direct method—usually adopted when older pension plans were being revised after the passage of the Social Security Act—is to provide that social security benefits, usually only the "primary benefits," shall be deducted from the benefits provided by the private plan. Under such a provision, if a plan provided a benefit of 1 1/2 per cent of average earnings, an employee whose earnings over twenty-five years averaged \$2,000 would be entitled to a pension of \$750 per year or \$62.50 per month.



But, if his primary federal old age benefit amounted to \$36 per month, that would be deducted from the promised \$62.50. The employee would still get the \$62.50 but in two checks, one for \$26.50 from the plan, one for \$36 from the federal government.

Some companies, such as the American Telephone and Telegraph Company, recognizing the fact that the company contributes only half of the total contributions required under the federal old age security program, deduct from the nominal plan benefit only one-half of the federal old age benefit, instead of its total amount.

Although this deduction procedure has, so to speak, been ratified (perhaps largely as a matter of tactics) in many recently negotiated "\$100 a month" pension plans, it is a crude technique. It can never be satisfactorily explained to the average employee. It will always create the impression that the employer is taking away what the government gives and is, in effect, nullifying the government's program. This method also implies that, in a sense, the employer is underwriting the federal benefits and that any change in these benefits would directly affect his pension liability.

But if private pension plans are regarded—and we believe they should be—as supplementary to the basic government program, some such adjustment is necessary. It can be achieved more gracefully and without arousing employee suspicion and protest by the second method, that of "integration." Integration has the further advantage, that the employer assumes a definite pension liability irrespective of possible changes in federal old age benefits.

Despite its apparent technical complexities, integration consists of nothing more than the adoption of a benefit formula that takes account of the federal benefits generally but with special reference to the fact that such benefits are heavily weighted in favor of low income and short-service employees. An integrated plan therefore pays relatively low benefits on the first segments of earnings (for example, 1 per cent on the first \$3,000 or, perhaps, 1/2 per cent on the first \$600 and 3/4 per cent on the next \$1,200 and 1 per cent on the balance up to \$3,000), with higher benefits on the higher segments (say, 1 1/2 per cent on the excess over \$3,000). Typical "breaking points" are \$600, \$1,800 and \$3,000. The figure of \$600 is used because a large part of the average employee's federal benefit consists of 40 per cent of the first \$50 of his average monthly wage. The figure of \$3,000 is almost inevitably used since that is the maximum amount on which federal contributions have been levied and social security benefits computed. Intermediate breaking points, such as \$1,800 are sometimes used to achieve a more precise adjustment. However, the prevailing tendency is to avoid undue refinements in integration and to stick to a single break at \$3,000 with a two-step formula, such as 1 per cent on the first \$3,000 and 2 per cent on the excess over \$3,000.

But integration is more than obviously sound policy. It is required under the Revenue Act of 1942 as a necessary condition for a plan to receive favorable tax treatment. In some circumstances the permitted or prescribed methods of integration can be troublesome, but they seldom prove so if a plan follows a fairly standard pattern and does not attempt to discriminate unduly in favor of higher paid employees.

Simply stated, integration is required to obtain Treasury Department approval for plans under which a minimum amount of earnings is required for membership or which provide proportionately greater benefits for employees earning above any specified salary than for those below such amount. Usually a pension plan is considered as satisfactorily integrated with social security if it does not provide relatively higher total benefits, including 150 per cent of the anticipated primary social security benefits, for higher paid employees than for lower paid employees, assuming identical periods of service. The comparison is made with the lower paid employees entirely excluded from the plan as well as those covered by the plan.

Treasury Department Mimeograph 5539 contains specific, detailed instructions about pension plan integration with social security. The mimeograph presents formulas and tables that serve as a guide for determining whether benefit plan formulas integrate with social security in a manner acceptable to the Treasury Department.

As previously mentioned, the monthly "primary insurance benefits" under the Social Security Act for employees retiring at age sixty-five are heavily weighted in favor of the low income employees. The percentage of benefit to average monthly earnings ranges from 56 per cent on \$50 down to about 22 per cent on \$250, as shown in the following tabulation, assuming forty years of coverage under the act:

Average Monthly Earnings	Federal Monthly Primary Benefits	Federal Benefits Expressed as Percentage of Average Monthly Earnings	
		For Total of Federal Coverage	Per Year of Federal Coverage
\$ 50	\$28	56.0%	1.40%
100	35	35.0	0.88
150	42	28.0	0.70
200	49	24.5	0.61
250	56	22.4	0.56
400	56	14.0	0.35
600	56	9.3	0.23
800	56	7.0	0.18

Integration keeps the benefits of a private pension plan separate from those of the Social Security Act but takes account in the pension formula of the relatively higher benefits provided by the government at the lower earnings levels. As shown in the above tabulation an employee earning an average of \$250 per month would receive a federal benefit of 0.56 per cent or about one-half of 1 per cent of his average earnings for each year of coverage. Now, if a pension plan were intended to provide a retirement income of 60 per cent of average earnings after forty years of participation,

this objective could be accomplished by providing a benefit of 1 1/2 per cent of earnings for each year of participation. However, since the primary social security benefits equal about one-half of 1 per cent on the first \$250 of average monthly earnings, the pension plan formula could take account of these benefits by providing benefits for each year of service of 1 per cent of the first \$250 of earnings, plus 1 1/2 per cent of the excess over \$250. Variations in the formulas used and the efforts to achieve different degrees of integration will be indicated in later tabulations.

The problem of integration when the Social Security Act is amended will remain substantially the same but with changes in some of the factors. If the maximum earnings base is increased from \$3,000 to \$3,600 per year, as now seems likely, new pension plans will certainly use \$3,600 as their major breaking point. Subject to some questions of timing and collective bargaining tactics, it would seem sound policy for existing plans also to change to this higher figure. The new benefit formula—50 per cent of the first \$100 of average monthly wages, plus 15 per cent of the next \$200—greatly increases the ratio of benefits to wages, yielding for an employee of thirty years' service, with earnings of \$250 per month, a benefit of roughly 1 per cent per year of service. Plans would integrate, therefore, with a somewhat larger differential than has hitherto been permitted between the percentage benefit rates on different segments of earnings. While this factor should be considered, after the Treasury has revised its regulations, in designing new plans, there is so strong a presumption against reducing benefits under existing plans that it is unlikely of itself to lead to any significant change in typical pension plans now in effect.<sup>3</sup>

#### 9. Type of Retirement Income

Another necessary decision in determining pension benefits is to select the type of annuity or pension that the plan will offer and, as always, this decision will affect both the extent to which plan objectives can be achieved and the costs involved. The usual practice is to offer a standard type of pension but to give retiring employees the privilege of selecting specified variations from the standard, of equivalent actuarial values. Such employee rights to elect optional forms are usually subject to some restriction, to prevent what is called "adverse selection" against the pension fund reserves. For example, election of a joint and survivor option must usually be made at least five years before retirement. Otherwise, if the election could be deferred till the date of retirement, all employees then in poor health could be expected to exercise this option and thus substitute for the probability that they might draw benefits for only a short time the probability that their survivors would draw benefits for a longer period.

There are three common forms of retirement income: life annuity, refund annuity and years-certain annuity. Under each of these there is

For a fuller treatment of this point, see Social Security Amendments and Private Pension Plans, issued by Industrial Relations Counselors, Inc., July 5, 1950 (Industrial Relations Memos, No. 115), 11 pp.

usually an opportunity to elect a joint and survivor or contingent annuitant option.

A straight life annuity provides for the payment of the given income from retirement only until death. No further payments whatever are made upon death after retirement. This type of annuity may or may not provide death benefits upon death prior to retirement. While the strictly logical procedure might be to let group life insurance take care of necessary death benefits and keep the pension plan on a no-death-benefit basis, it has become customary to provide, as a death benefit prior to retirement, for the return of employees' contributions, usually with interest. Employer contributions are usually applied to purchase annuities on a no-death-benefit basis and therefore buy a somewhat larger share of the total annuity, since the contributions of those employees who die before retirement must be returned and are never really applied toward the purchase of annuities. This explains, for example, why a given plan that could be financed by an exclusive employer contribution of 5 per cent of payroll might require, if contributory, 3 per cent from the employer and 3 per cent from employees.

The refund annuity, in the form of the modified cash refund annuity most frequently used in pension plans, provides a preretirement death benefit of the employee's contributions, plus interest, and a postretirement death benefit of any excess of total employee contributions over total annuity payments received, with interest to the retirement date. For example, if an employee has contributed 3 per cent of his average salary of \$3,000 for twenty years, his contributions with interest to the retirement date might amount to about \$2,000. If his annuity were \$125 per month and he died after receiving only two monthly payments, under the life annuity form his survivors would receive no death benefit. Under the modified cash refund form they would receive \$1,750 (\$2,000 minus 2 times \$125).<sup>4</sup> The use of the modified cash refund basis (although of course it costs more for any given schedule of benefits) greatly facilitates selling a contributory plan to employees, since they can be assured that they or their dependents will always get at least all their contributions back in full, and usually with interest.

The years-certain annuity provides that the given annuity will be paid not only during the lifetime of the annuitant but for not less than an agreed period, usually of five or ten years, either to him or to his survivors. If under a ten-years-certain form an annuitant died after receiving only twelve monthly payments, these monthly benefits would be continued to his survivors for the balance of the period, viz., nine years.

The joint and survivor option provides that in consideration of a reduced annuity during the life of the pensioner, the annuity will continue

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Under the cash refund basis the benefit would consist of the employee's accumulated contributions minus only that part of the annuity purchased with his own contributions. The full refund annuity in which the death benefit is the excess of all contributions over annuity payments is used chiefly under individual annuity plans.



to be paid after his postretirement death, in the same or a reduced amount, to a designated surviving beneficiary. The reduction in the amount of the normal annuity payment would depend on the proportion of the annuity to be continued to the survivor and upon the survivor's age and sex.

The relative values of these various forms can be accurately stated only by a series of tables which take full account of all the possible variables but can be generally indicated by the following example: A male employee contributing to a deferred straight life annuity, payable at age sixty-five, with only a preretirement death benefit consisting of his own contributions, with or without interest, might be able to elect the following alternatives to his normal life annuity of \$100 per month:

1. A modified cash refund annuity from about \$87 to \$98, depending on the ratio of his death benefit at retirement to his monthly annuity.

2. A five-year certain annuity of \$97 or a ten-year certain annuity of \$90.

3. A joint and survivor annuity of \$69 payable to him or his surviving wife if she were two years younger, of \$61 if she were ten years younger. If the wife were to receive only half of the amount payable during the annuitant's lifetime the figures would be \$82 and \$41, if she were two years younger; they would be \$76 and \$38 if she were ten years younger.

Of the 566<sup>5</sup> plans studied, 237, or 42 per cent, with 1,612,214 participating employees, specify the life annuity as the normal type; 288, or 51 per cent, covering 535,010 employees, use the modified cash refund annuity. Fourteen provide for a five-years-certain annuity, twenty for a ten-years-certain, and seven use other variants. Sixty plans specify only the normal annuity, and 506 plans permit the employee to select one or more optional forms, but these plans account for only a little more than half of the total participating employees.

#### 10. Benefit Statistics

a. Current Service Benefit Formulas: Of the 465 fixed benefit plans, fifty-six can be set aside as not typical. Eighteen of them provide no future service benefits on the first \$3,000 of annual earnings; five provide none on the excess over \$3,000. Twenty-six provide a single flat benefit; three specify a flat benefit on the first \$3,000, plus a percentage benefit on the excess; and four provide a percentage benefit on the first \$3,000, plus a flat benefit on the excess.

Another 107 plans are somewhat unusual in simply providing a uniform benefit percentage on total earnings—twenty-six of them making an allowance for federal old age benefits. A distribution of these plans according to the benefit percentage specified is shown in the following tabulation:

Sixteen companies have different types of normal annuities for separate employee groups or different portions of the benefit.

Benefit Expressed as Percentage of Total Earnings per Year of Participation	Number of Plans
0.50.....	1
0.75.....	4
0.76—0.99.....	2
1.00.....	34
1.01—1.49.....	2
1.50.....	17
1.51—1.99.....	3
2.0.....	17
2.5.....	1
1.0 including federal old age benefits.....	5
1.25 including federal old age benefits.....	1
1.5 including federal old age benefits.....	6
2.0 including federal old age benefits.....	4 <sup>a</sup>
1.0 including half of federal old age benefits.....	7
1.5 including half of federal old age benefits.....	1
2.0 including half of federal old age benefits.....	2
Total.....	107

<sup>a</sup>

One other plan provides a benefit, including federal old age benefit, of 2 per cent on the first \$3,000 of earnings but only 1.5 per cent on the excess.

The balance of the fixed benefit plans—301 in number—provide benefits at different percentage rates on the first \$3,000 or smaller segments of annual earnings and on the excess over \$3,000. With thirteen exceptions<sup>6</sup> all of them fix benefits on the excess over \$3,000 at level percentages per year of service. It is these percentages that indicate, because of the requirements for integration, the basic benefit objectives of the plans. The unavoidably complicated tabulation on the following page shows that in this group of plans the overwhelming majority, numbering 275, are designed to provide an overall benefit of 1.5 per cent or more of earnings per year of service. Any plan attempting less is substandard. One hundred and twenty-one plans can be described roughly as 1 1/2 per cent plans, 124 as 2 per cent plans. A majority of 204 of these plans seek their objective by using only one breaking point of \$3,000, using a level percentage on the first \$3,000, and a level but higher percentage on the excess over \$3,000. The most frequent single combination is found in the seventy-nine plans that provide 1 per cent on the first \$3,000 and 2 per cent on the

6

Twelve plans reduce the percentage benefits on earnings in excess of specified amounts ranging from \$6,000 to \$40,000 per year; one plan provides higher benefits on earnings in excess of \$5,160 per year.

NUMBER OF PENSION PLANS USING DIFFERENT BENEFIT PERCENTAGES PER YEAR  
OF CURRENT SERVICE, ON VARIOUS SEGMENTS OF EARNINGS

Benefit Percentage on First \$3,000 of Earnings	Benefit Percentage on Earnings in Excess of \$3,000							Total
	0.75 to 0.99	1.0	1.01 to 1.49	1.5	1.51 to 1.99	2.0	2.01 to 2.5	
Level percentage								
0.75 or less.....	1	2	9	55	5	2	..	74
0.76—0.99.....	..	..	2	2	3	1	..	8
1.0.....	..	..	..	27	1	79	..	107
1.01—1.49.....	..	..	..	..	..	6	3	9
1.5.....	..	..	..	..	..	5	1	6
Total.....	1	2	11	84	9	93	4	204
Percentages excluding first \$600								
0.75.....	1	..	..	2	..	..	..	3
1.0.....	..	2	1	12	..	2	..	17
1.5.....	..	..	..	1	..	3	..	4
Total.....	1	2	1	15	..	5	..	24
Percentages on first \$1,200 and next \$1,800								
0.5 and 1.0.....	..	..	3	1	..	..	..	4
0.75 and 1.0.....	..	..	..	3	..	..	..	3
0.75 and 1.1—1.5.....	..	..	..	1	1	1	..	3
1.0 and 1.5.....	..	..	..	..	..	5	2	7
Others <sup>a</sup> .....	..	..	1	..	2	2	..	5
Total.....	..	..	4	5	3	8	2	22
Percentages on first \$1,800 and next \$1,200								
0.75 and 1.0.....	..	..	..	4	..	..	..	4
0.75 and 1.5.....	..	..	..	..	..	1	3	4
1.0 and 1.5.....	..	..	..	..	..	2	..	2
Others <sup>a</sup> .....	..	..	..	5	4	3	1	13
Total.....	..	..	..	9	4	6	4	23
Other combinations <sup>b</sup> .....	..	1	3	8	4	12	..	28
Grand total.....	2	5	19	121	20	124	10	301

<sup>a</sup> The other variations in benefit rates in plans which break at \$1,200 or \$1,800 are not significant.

<sup>b</sup> These twenty-eight plans have twenty-three different combinations of breaking points, excluded earnings and differential benefit percentages. They obviously would hardly give any guidance in pension planning.

excess. Any plan providing such or better benefits can be generally regarded as in accordance with good prevailing practice.

The many variations in the combinations of benefit percentages used in the plans which have more than one breaking point are believed to be not especially significant as indicators of prevailing practice. They result in part from efforts to achieve perhaps unnecessarily close integration with federal old age benefits and in part from efforts to cut costs when managements find it necessary to find some middle ground between the benefits they would like to provide and the costs they can afford.

A breakdown of these benefit ratios according to whether the plans are contributory or noncontributory revealed no significant difference in the liberality of the benefit rates applicable to the first \$3,000. But in the rates applicable to the excess over \$3,000 the contributory plans are clearly more generous, since 86 per cent of them, as compared with only 58 per cent of the noncontributory plans, provide a benefit of 1 1/2 per cent or better.

The benefit rates in the sixty-three plans established in 1946-1948 show no significant trend but are generally in accord with the patterns previously indicated. Forty-three provide overall benefits of 1 1/2 per cent or better; forty-nine use only one break at \$3,000; and fourteen provide 1 per cent on the first \$3,000 and 2 per cent on the excess.

b. Past Service Benefit Formulas: The ultimate plan objective is indicated in the future service benefit formula but, as previously suggested, cost considerations frequently necessitate using a somewhat less generous formula for past service benefits. It is hardly possible to compare these formulas without enumerating almost the complete details of each plan, especially with reference to the date of the earnings on which past service benefits are based and to many exclusions on the basis of age, or service or earnings.

Some impression of prevailing practice can be gleaned, however, from a summary of the main facts. Of the 554<sup>7</sup> plans analyzed, thirty-nine make no provision at all for past service benefits, fifty-four provide them on an informal, unreported or indeterminate basis, and thirteen provide for a minimum pension in lieu of past service credit. Thus, broadly, 106 plans, or 19 per cent of the total, either do not provide or do not clearly prescribe past service credit. More narrowly, only thirty-nine plans, or 7 per cent of the total, completely ignore past service.

Among the 448 plans which clearly prescribe past service credits, there are many more qualifications even than in future service benefit formulas. Service before specified ages (from before age twenty-five in eighteen plans to before age fifty in one plan) is excluded in 203 plans.

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Four companies had two pension plans for separate employee groups, each with a different past service benefit formula. The total of 554, of course, also includes money purchase plans.



Certain early years of service (from the first year in thirty plans to the first ten years in one plan) are excluded in 142 plans. Service in excess of a specified number of years (ranging from five to forty) is excluded in forty-six plans. Segments of prior annual earnings (from the first \$600 in fifteen plans to the first \$3,600 in one plan) are excluded in thirty-five plans. The benefit percentage on past service annual earnings in excess of specified amounts is reduced in nine plans. Various types of allowance for social security are made in fifty-three plans.

On top of these restrictions the past service benefit percentages vary in many combinations. Different benefit percentages are used according to age and earnings in four plans, according to age in thirty-one plans, according to service in fourteen plans, and according to earnings in eighty-six plans. In this last group of eighty-six very few use more than the single break at \$3,000 per year.

Level percentages are used, however, in 313 plans, distributed as follows:

Level Benefit Percentage on Credited Past Service Earnings	Number of Plans
0.375—0.49.....	1
0.50—0.74.....	20
0.75—0.99.....	47
1.00.....	155
1.01—1.24.....	3
1.25—1.49.....	12
1.50—1.74.....	39
1.75—1.99.....	1
2.00—2.5.....	35
Total.....	313

Subject to reservations about the effect of the types of restrictions previously enumerated, about all that can be said is that nearly a half the plans—155 of the 313—seem to provide a past service benefit of 1 per cent, and another ninety try to do better than that.

The same variations, indicative of no special trend, are found in the sixty-three plans established in 1946-1948.

c. Maximum Benefit Provisions: Three hundred and thirty-eight plans, or 61 per cent of the total, with 918,225 participating employees, or 38 per cent of the total, set a maximum limit on benefits by one or more of the provisions shown in the following tabulation:

Type of Provision	Number of Plans
Maximum annual pension.....	209
Maximum salary credited for benefits.....	143
Maximum service credited for benefits.....	29
Pension limited to percentage of annual earnings.....	14

The proportion of plans setting a maximum in benefits was somewhat higher in the 1938 study, being 72 per cent. Since 1938, eighty-five plans revised their maximum benefit provisions. Ten removed the limitations on maximum annual pensions, while nine introduced such limitations; twenty-nine raised the maximums. Eight removed the maximum limit on salaries credited for benefits, and two introduced such limitations; twenty-seven raised the maximums. Of the sixty-three plans established in 1946-1948 less than 50 per cent included maximum benefit provisions. There would seem, therefore, to be a noticeable trend toward abolishing or liberalizing such restrictions.

The maximum annual pensions specified range from \$900 to \$37,500 and are distributed as follows:

Maximum Annual Pension	Number of Plans
Less than \$3,000.....	10
\$ 3,000—3,999.....	8
4,000—5,999.....	23
6,000—7,999.....	60
8,000—9,999.....	17
10,000—14,999.....	49
15,000—19,999.....	23
20,000 or over.....	16
Graduated according to salary.....	3
Total.....	209

Twenty-two of these plans include other restrictions. Six of them include federal old age benefits. Two others include such benefits and have alternative maximums of 50 and 70 per cent of pay, respectively. One includes federal old age benefits but has an additional benefit of \$18 for each year of service in excess of ten. Three plans have alternative maximums of 50 per cent; one each specifies 60, 66 2/3, and 70 per cent. One limits only future service benefits; three limit only past service benefits. One also limits future service credit to twenty years; one limits total credit to thirty years. One limits benefits on the first \$3,000 of annual earnings to 50 per cent.

Of the 143 plans prescribing salary maximums for crediting benefits, 124 plans set such maximums for both past and future service (in ten of them, with different limits for past and future service). In sixteen plans the maximums are only for past service and in three, only for future service. The plans are distributed as shown in the tabulation on the following page.

There is no pattern among the twenty-nine plans limiting benefits by establishing a maximum limit on credited service. Nineteen do so for past service only—four setting the limit at thirty-five years, three at twenty, two each at ten, twenty-five, thirty, and thirty-seven and one-half years and one each at fifteen, sixteen, thirty-three and even forty years.

Maximum Salary Credited for Benefits	Number of Plans Applying Salary Maximum for—			
	Both Past and Future Service	Future Service With Lower Maximum for Past Service	Past Service Only	Future Service Only
Under \$5,000...	15	..	3	..
\$ 5,000—7,499.	12	1 <sup>a</sup>	3	..
7,500—9,999.	6	..	1	..
10,000—12,499	27	7 <sup>b</sup>	2	..
12,500—14,999	..	..	..	1
15,000—17,499	21	1 <sup>c</sup>	3	1
17,500—19,999	6	..	..	..
20,000 or over	27	1 <sup>d</sup>	4	1
Total.....	114	10	16	3

a  
Maximum for past service is \$10,000.

b  
In four plans the maximum is under \$5,000 for past service; two plans set \$5,000—\$7,499; one sets \$7,500—\$9,999.

c  
Past service maximum is \$5,000—\$7,499.

d  
Maximum of \$10,000—\$14,999 set for past service.

Nine limit total credited service—five to thirty-five years, two to forty, and one each to thirty and thirty-eight. One limits future service to thirty years.

Fourteen plans limit benefits to a specified percentage of annual earnings. Eight include federal old age benefits and set the following limits: two plans each specify 75 and 50 per cent; the others have limits of 40, 45, 60, and 66 2/3 per cent, respectively. One includes half of federal old age benefits, with a limit of 75 per cent. Five disregard federal benefits, two of which set limits of 60 and 75 per cent; one sets 90 per cent.

d. Minimum Benefit Provisions: One hundred and nine plans, or 19 per cent of the total, with 1,550,194 participating employees, or about 64 per cent of the total, provide minimum pensions by one or more of the provisions tabulated on the following page.

Twenty-nine of these plans reduce the benefits by the amount of federal old age benefits, in whole or in part; fourteen have minimum service requirements to qualify for minimum benefits; nine specify minimum benefits for past service only.

Type of Provision	Number of Plans
Flat minimum benefit amount.....	67
Minimum benefit varying according to earnings class or length of service.....	8
Minimum benefit per year of service.....	13
Minimum benefit for charter members.....	19
Miscellaneous.....	2
Total.....	109

In the 1938 study 16 per cent of the plans included minimum benefit provisions, but only five of the sixty-three plans established in 1946-1948 do so. There is, therefore, no significant trend to be discerned in these figures, although it may safely be assumed that collective bargaining pressures for the introduction of new and more generous minimum pension provisions have started a trend that will become increasingly evident.

The only type of minimum benefit provision that warrants detailed breakdown is that specifying a flat minimum annual benefit amount. Such amounts were as follows:

Minimum Annual Benefit Amount	Number of Plans
Under \$240.....	12
\$ 240—359.....	21
360—479.....	8
480—599.....	8
600—839.....	13
840—1,079.....	4
1,080—1,199.....	..
1,200 or over.....	1
Total.....	67

It is immediately evident that until recently a minimum pension of \$100 per month was rare indeed.

e. Average Pension Benefits: While crude arithmetic averages conceal wide variation, it is of interest, as shown in the following tabulation of replies from 396 companies, that the average pension actually being paid is \$766 per year, less than the average of \$797 found in the 1938 study which, however, was based on reports from only seventy-five companies. It is also a matter for surprise that the average under contributory plans is less than under noncontributory plans: