THE ACCOUNTING ASPECTS OF INDUSTRIAL PENSION PLANS

DISSertation

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By

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The primary purpose of this paper is to recommend and illustrate a method for the accrual of pension cost which can be applied with reasonable uniformity to various types of industrial pension plans. The method proposed is one which the author believes will conform to generally accepted accounting principles as applied to other areas of financial accounting and reporting.

 Anyone who makes even a cursory study of current practice in accounting for pension cost will come rapidly to the conclusion that the large majority of companies record pension cost on what is essentially a cash basis. It will be shown that this concept of pension cost is inadequate for purposes of income determination, and that this misconception can result in pension planning and administration which is contrary to the best interests of the firm.

 The paper is divided into three parts. Part I is concerned with a brief history of the pension movement, and with recognition of some of the economic aspects. Part II deals with pension planning from the standpoint of the individual employer. Part III covers the matters of recording and reporting pension information.

The function of Part II deserves special mention. This section serves two purposes which are not closely related, and which must be kept in mind by the reader at
all times.

The first purpose relates to the accounting function of cost control. The only time at which pension cost can be effectively controlled is in the planning phase. Once adopted, pension plans are extremely difficult to terminate or to amend in such a way that employer costs are significantly reduced. Either course of action may result in employee illwill and tax penalties so costly that continuation of a badly planned pension program may be the only feasible course of action. To fulfill his responsibility as a controller of pension cost, the accountant must take an active part in the planning of a retirement program.

The second purpose of Part II is to provide the necessary background in support of the accounting proposals presented in Part III. To thoroughly understand the significance of these proposals, the accountant must be aware of the nature of the assumptions on which the actuarial calculations are based. His knowledge of these assumptions must be sufficient to allow him to determine which are acceptable for accounting purposes, and which are not. In addition, an examination of the wide variety of funding methods will reveal the inadequacies of the cash basis for recording pension cost.

Assuming validity of the assumptions, the technique of cost calculation is the job of the actuary. No attempt is made to develop the actuary's methods beyond the point necessary to the background of the company accountant.
In his study of the subject of pensions, the author examined most of the published books and articles, as listed in the Bibliography on page 272, which relate primarily to the determination of, or the accounting for, pension cost. Some of these publications deal primarily with actuarial methods, and would prove useful to anyone who wishes to investigate more fully the technical aspects of pensions.

In addition to the study of written material, the author conducted a series of interviews with company executives and other experts in the field of pensions in an attempt to get their ideas and opinions. The specific objectives of the research are outlined in the following paragraphs.

First, in the cases where the company adopted its plan voluntarily, the author attempted to find out why a pension plan was adopted and what benefits it was expected to produce; in addition, in the cases of the older plans, to what extent the intended benefits had been realized. The reasoning here was that the cost of the pension plan must be accrued over the period of the intended benefit, to produce the proper matching of costs and revenues. If the period could be determined, it would be reasonable to apply the same principle in those cases where the plan was adopted as a result of union negotiation.

Second, the author tried to find out why a particular plan was adopted, in preference to the alternatives, and
whether there was any relationship between different types of plans and different objectives. No attempt is made in this paper to evaluate the merits and demerits of particular types of plans, but it is particularly important in corporate accounting to know that the differences exist, and that these differences can be vital in the determination of the cost of the pension plan, and on the allocation of that cost to periods.

Third, the author made an informal study of the actuarial assumptions that were made in the cost calculations for particular types of plans, and tried to find out the extent to which these assumptions had been borne out by company experience. The importance of this segment of the study will be made evident in the cost calculations.

Although interviews were held with executives of several companies which varied in size and type of pension plan, the results of the study are difficult to evaluate. Certainly most of the conclusions of this paper are the result of opinions and ideas formed in the course of the visitations, but the line of reasoning is difficult to trace. No questionnaires were submitted, none of the results of the interviews was tabulated, and few notes were taken. Almost all companies indicated that the information was of a confidential nature and the names of these companies are not mentioned in the body of the paper. An alphabetical listing of companies visited, and of pension consultants, appears as Appendix A.
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PART I

INTRODUCTION
CHAPTER I - HISTORY OF INDUSTRIAL PENSION PLANS IN THE UNITED STATES

The rapid expansion of the industrial pension movement in the last ten years in this country has led some business executives to question its permanence. It is contended that high war and post-war profits, and high corporate income and excess profits tax rates have led to a flurry of pension plan adoptions which will recede along with the return of conditions to normalcy. The author found that many businessmen who held this view displayed an attitude of indifference toward the problem, and refused to recognize the long term implications of widespread industrial pensions.

If we look upon pension plans solely as a tax dodge, then perhaps this view is justified, but it ignores the more fundamental factors underlying the pension movement. It is important that we consider these historical factors, because viewing the recent pension development as a temporary condition can have extremely dangerous consequences. Further, we must understand why the accounting for pension costs has developed in the way that it has, and why accountants generally are reluctant to depart from traditional methods. One purpose of this dissertation is to influence the acceptance of a more realistic basis of accounting for pension costs, and this cannot be accomplished
effectively without a full understanding of development of current practice.

For these reasons, this chapter will be concerned with the brief history of industrial pensions in this country.

PRIOR TO 1900

There were few industrial pensions in this country prior to 1900. Before the coming of big business, business enterprises were dependent upon an individual or a family, or at most a small number of families. There were relatively few employees and the relationship was usually of short duration. The problem of providing for aged employees was therefore limited to the exceptional case.

Nevertheless, the period is important, for it was during this time that conditions were developing which led to wide adoption of pension plans in the next century. The most important condition was the development of the large corporation. This development brought with it a relationship between the employee and his job, and between the employee and his boss which was strong enough to last beyond the point when the employee was no longer able to work. There was a weakening of family ties, and the obligation of children to support aged parents was diminishing. At the same time, high speed production and increasing mechanization resulted in occupational and personal
disabilities, which have come to be regarded, in part at least, as the responsibility of the employer.

Latimer lists several circumstances which led to the first formal adoptions of pension systems by American industries. Perhaps most important at that time was the advisability of removing aged employees who were no longer able to work efficiently and with safety. This was particularly important in the railroad industry, where most of the earlier pension plans were established. Another consideration was the desire to establish a work force of stable, competent employees, and to promote long, loyal, and uninterrupted service.

The first formal pension plan adopted in the United States was a noncontributory plan of the American Express Company in 1875. The second was a contributory plan, established as part of the relief association of the Baltimore and Ohio Railroad Company on May 1, 1880. In 1882, Alfred Dolge, a felt manufacturer, established a noncontributory plan, and in 1892 the Solvay Process Company did likewise. There were a few others prior to 1900, but only in the railroad industry was there any significant development of the pension movement, and even here it appears that a small

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2Ibid., p. 21.
percentage of employees was covered.

The information on these early plans is somewhat limited. For this reason, perhaps we should not inquire into motives, but it appears that the reasons behind the adoption of these plans were partly economic, with emphasis on the benefit to the employer, and partly social, with emphasis on the avoidance of poverty of old age employees. The former was probably more important that the latter. The emphasis was on the noncontributory principle, which was to extend up to very recent times.

1900 - 1942

O'Neill\(^3\) divides this period at about 1925, which is about the time that insurance companies became interested in pension plans, and began to offer their services in administering and financing industrial pensions. Prior to that time, the plans were company administered, with varying degrees of formality of administration and financing.

As indicated above, the railroad industry took the lead. By 1905, 35.4 per cent of all railroad employees were covered. By 1908, this had increased to 66.9 per cent, and by 1927, almost 95 per cent of employees on Class I railroads

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were covered.\textsuperscript{4} Taking all industrial pensions as a whole, the greatest activity came in the period 1911 - 1920, during which time 221 pension plans were adopted, as compared to a total of 66 plans adopted prior to that time.\textsuperscript{5} After 1920, the number of new adoptions decreased. Latimer\textsuperscript{6} attributes this to the fact that most of the larger corporations had pension plans by that time, and that new adoptions would have to come from the smaller companies.

Of the plans adopted prior to 1925, a good many were of the informal type, where the company reveals no well-defined policy or system with regard to pension payments.\textsuperscript{7} In many cases employees were not treated uniformly, the employer made no advance commitments, and the pension payments were closely akin to charity. In those cases the employee had no reasonable assurance of receiving any pension, since the payments were completely at the discretion of the management. The employer might feel compelled


\textsuperscript{5}Ibid., p. 42.

\textsuperscript{6}Ibid., p. 43

\textsuperscript{7}For a complete analysis of types of early plans and descriptive terminology, See Conant, Luther, \textit{Critical Analysis of Industrial Pension Systems}. New York: Macmillan Company. 1922.
to pay the pension, for fear of public censure or some other reason, but such payments would be dependent upon the financial ability of the company. However, the obligation was vague, and probably impossible to compute. The need to finance such a "plan" was seldom recognized.

The adoption of formal pension plans represented an advance over the informal plans. In these cases, a definite procedure governing pension payments, eligibility, and other matters was laid out, and disclosed to employees. As in the informal plans, however, the management remained in complete administrative control, and it is important to note that seldom were the pension payments guaranteed. Occasionally, the employer would guarantee the payment of pensions once the payments had begun. In these cases also, then, the financial liability of the employer was obscure, and even in cases where some financial provision was made, the provision was seldom adequate.

From the accounting standpoint, these pensions were handled in either one of two ways. The most widely used was the pay-as-you-go policy, where pension payments were met out of current income, with no advance financial or accounting provision being made. In effect, the retired employees were merely retained on the payroll. The other method was the so-called balance sheet reserve system, in which reserves were established prior to the payment of the pension. It appears that most of these reserves were created out of
appropriations of retained income. The amounts in these reserves were in most cases the estimates of management, without benefit of professional advice from insurance companies or actuaries, and in most cases were not adequate in amount. Further, the reserves were not constantly increased. Provisions were more dependent on profits than on the pension liability. 8

Finally, these reserves were seldom accompanied by a segregation of assets to be used in payment of pensions. Even in those cases where assets were segregated, the amount set aside was not often used in paying pensions, but was a kind of frozen guaranteed reserve. The pension payments in these cases were paid out of working capital, and charged to current income.

Two developments in the late twenties changed the thinking of many corporate managements with regard to pensions. The first was the entry of insurance companies into the field, and this development vastly improved the financial, administrative and accounting aspects of pensions. It removed a large portion of the discretionary, contingent features of the earlier plans. This was particularly true of the contributory plans, which came into being in greater numbers than ever before. Insured plans were

financially sound, and accounting for pension costs automatically became greatly improved.

The other development at this time concerns certain changes in the Revenue Act of 1928. Prior to this Act there had been no question about the deductibility of pension payments on a pay-as-you-go basis. Similarly, payments to insurance companies under insured plans were deductible without question. On the other hand, companies which operated balance sheet reserve systems were having difficulty in obtaining deductions for those reserves. The Revenue Act of 1928 provided that deductions for accumulated reserves would be allowed, where the employer would fund the reserve by transferring assets to a trust. The deduction for accumulated reserves was to be spread over a period of not less than ten years. This amendment might have led to widespread adoptions of trusteeed pension plans, had it not been for the current popularity of insured plans.

The law authorizing the use of the trust for purposes of pension plans first appeared in the Revenue Act of 1921. It passed through several modifications until, in 1938, it became a separate section of the Internal Revenue Code (Sec. 165). By this time, the Code made it clear that a trust shall be tax-exempt if it is established by the employer for the sole benefit of "some or all of his employees" as a part of a pension, stock-bonus, or profit sharing plan. The phrase "some or all of his employees"
cleared the way for the establishment of tax exempt trusts on a grand scale. A good many of these trusts were for the exclusive benefit of selected officers and employees (who might also be stockholders) and, in the opinion of the Treasury Department, constituted a means of tax avoidance which was not within the intent of the Congress.\(^{10}\) The 1938 law was amended in 1942, therefore, and has remained substantially the same up to the present time.

1942 - 1949

The portion of the Revenue Act of 1942 relating to employee trusts is too comprehensive a piece of legislation to be examined here in minute detail. In many ways, it was more restrictive than the earlier acts. It provided that employee eligibility rules be so drawn that discrimination among employees be eliminated. It defined more clearly the deductions which could be taken for contributions to a pension trust, and placed an upper limit on the amounts deductible for contributions to a profit sharing trust (Sec. 23p). It granted authority to the Commissioner of Internal Revenue to approve or disapprove plans which did not qualify under the law. Following the passage of the law, there followed a series of Treasury regulations

concerning additional requirements for qualification, and clarification of the existing requirements.

In spite of the restrictions placed on pension plans by the 1942 law, the immediate effect was to increase the rate of adoptions by corporations. A great deal of the uncertainty and confusion existing as a result of the earlier law had been eliminated. The tax advantage of employees' trusts remained, and in many cases existing pension plans required only minor revisions to qualify for deduction under the new law. The new law was given wide publicity, and employers developed a greater understanding of the nature of pension plans and of the advantages to be gained from their use.

The following table illustrates the growth of pension plans during the war years. Data are from the Bureau of Internal Revenue and are based on pension plans which qualified for tax-exempt rulings through August 31, 1946.
<table>
<thead>
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<th>Period in which plan became effective</th>
<th>Number of plans</th>
<th>Number of participating employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 1930</td>
<td>105</td>
<td>1,394,184</td>
</tr>
<tr>
<td>1930 to 1939</td>
<td>517</td>
<td>530,606</td>
</tr>
<tr>
<td>Jan. 1, 1940 to Sept. 1, 1942</td>
<td>843</td>
<td>450,008</td>
</tr>
<tr>
<td>Sept. 2, 1942 to Dec. 31, 1944</td>
<td>4,208</td>
<td>714,681</td>
</tr>
<tr>
<td>Jan. 1, 1945 to Aug. 31, 1946</td>
<td>1,189</td>
<td>201,129</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,862</strong></td>
<td><strong>3,290,608</strong></td>
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In addition to the Revenue Act of 1942, there were other factors which added greatly to this rapid growth of pension adoptions. During the war a great many restrictions were placed on increases in basic wage rates, as part of a broad program to combat inflation. In order to hold and attract employees under these conditions, many employers adopted pension and welfare plans which were specifically exempt under the Wage Stabilization Act of 1942. Under the burden of excess profits taxes, corporations could contribute to generous pension plans, and have the government stand all but a minor fraction of the cost. Section 102 of the Internal Revenue Code, involving penalty taxes on improper surplus accumulations, has been cited as having been a substantial
incentive for pension plan adoptions by corporations which were in danger of having penalty surtaxes assessed on them.\textsuperscript{11}

One cannot deny, therefore, that the effect of government regulations in the last decade has overshadowed all other factors in pension plan adoptions during this period. Unquestionably the effect of the war-time economy has speeded up enormously the development of pension plans in this country. Authorities, however, almost without exception, support the idea that this is merely the speeding up of a trend which, without the artificial stimulus, would have developed anyway. The rate of growth probably would have been much slower, and perhaps, on a much sounder basis.

\textbf{1949 - 1952}

The next major development in the field of industrial pensions came in the area of collective bargaining. In April of 1948, the National Labor Relations Board ruled that pensions and retirement plans are within the area of collective bargaining. The case was that of the Inland Steel Company and the CIO Steelworkers Union, where the latter charged Inland Steel with an unfair labor practice

\textsuperscript{11}Tax Institute, Inc. \textit{Economic Effects of Section 102}. New York. 1951.
for enforcing compulsory retirement. Inland Steel had refused to bargain the issue as a "condition of employment."

The decision of the NLRB had far-reaching implications. Relying heavily on the Taft-Hartley Act (1947), the board ruled that Congress intended to cover pension plans within the meaning of "wages and other conditions of employment", and that the employers' contributions to pension plans constituted wages to the employees. This ruling is in interesting contrast to the Wage Stabilization Act of 1942, where pensions were specifically exempt from the restrictions of wage stabilization. It appears that the government is willing to reverse its position if such is necessary to stimulate pension development. On February 26, 1952, the Wage Stabilization Board announced that new pension plans do not need advance approval by them, and will usually be exempt from any wage ceilings if the plan qualifies under Treasury department requirements.

The study conducted by the author was not of the scope which would be necessary to allow authoritative predictions into the future, but a few trends are obvious. Now that industrial pensions are subject matter for discussion at the bargaining table, we can predict with a fair degree of certainty that industrial pensions will expand in two dimensions: the broadening of coverage, and increasing the benefit. The CIO is successfully conducting a campaign for $100-a-month flat benefit pensions. Walter Reuther has set
$200-a-month as a minimum goal for 1960. The United Auto
Workers-CIO in Toledo now has in operation a single plan
covering union members working for 125 employers. Pension
credit can be transferred without loss to the employee if
he shifts from one employer to another within the group.
In addition, the adequacy of the accumulated funds are no
longer dependent solely on resources of the individual firm.

Traditionally, the American Federation of Labor has
been little interested in pensions, but this opposition has
been diminishing gradually. Since a good many of its mem-
bers are in temporary or transient work, the AFL has spon-
sored plans involving full and immediate vesting of the
employer's payment to the pension fund.\textsuperscript{12}

There has been a clamor from some quarters in
favor of the government taking over complete control of
administration and finance of industrial pensions.\textsuperscript{13} The
suggestion is made that a Federal Pension Act similar to
the Railroad Retirement Act be passed. A few have gone so
far as to suggest that private pensions be outlawed. With-
out considering the merits or demerits of these proposals,
it seems unlikely that any such thing will occur in the near
future. The Railroad Retirement Act was passed to aid the

\textsuperscript{12}Boyce, Carroll W. \textit{How to Plan Pensions}. op. cit.
p. 346.

\textsuperscript{13}Brundage, Percival. "Pensions from the Accountants
railroads when their pension funds ran short. We might recognize the possibility that the government may rescue the Coal Miners' Welfare Fund, but most of the other industries with widespread pensions (steel and telephone industries) are probably too well financed to require much government action.

It is interesting to note the effect that general business conditions have on union demands in the pension field. In 1949, for example, it became apparent that the "fourth round" wage increase was not to be generally accepted by management, and the business slump that occurred at that time made it impracticable for unions to press their demands. The major shift in emphasis at that time was, therefore, from wages to pensions. Unions were accepting the NLRB's interpretation of pensions as "deferred wages" and proceeded to bargain on that basis.

The end of the short-lived slump and increases in production for war in 1950 brought back the high level of business activity, and the resumption of the inflationary trends. The pressure for more and larger pensions eased, and the unions began again to bargain for direct wage increases. Perhaps our information is too limited to conclude from it that in the future the pressure for pensions will be greatest when employers are least able to pay direct wage increases, but, in the absence of a better outlet for union energy, it appears to be the trend.
If this represents current union philosophy with regard to pensions, presumably it is based partly on the fact that the payment of pension liability is one which can be postponed for long periods, and further, that the funding of the past-service credit can be put off indefinitely. Perhaps then, we can attribute the success of the unions in the recent bargaining on pensions to a short-sighted policy on the part of both management and the unions, and to a lack of knowledge of the true nature and size of pension cost.

Accountants must assume their share of the responsibility for this situation. Current accounting practice has followed the policy of recording pension cost as the liability is paid. In the majority of the cases, this has resulted in the understatement of these costs. To the extent that this policy has contributed to the adoption of over-generous pensions, or to the adoption of pensions by employers who cannot afford them, accountants and others have been at fault. What is needed by management at the bargaining table is a well-defined line of attack, based upon a knowledge of the facts about pension costs, stripped of the actuarial mysteries which, up to the present time, have unnecessarily beclouded the issue.
CHAPTER II

THE ECONOMIC PROBLEM OF INDUSTRIAL PENSIONS

The fundamental purpose of this second chapter is the same as the first; that of impressing the reader with the tremendous importance of industrial pensions. In this chapter, however, there is a change in point of view. Here the importance of pensions will be discussed as to the effect on the economy as a whole, rather than the effect on the individual business firm. Here the emphasis is on planning for the future as a society, rather than the planning of an individual business unit.

PRESENT AND FUTURE PENSION COSTS

First of all, pensions can be looked upon as an economic result of a very significant shifting of the age groups of our population. Since 1900, while the population of our country has doubled, the population age 65 and over has quadrupled. In 1900, only about four percent of our population was over 65. Today it is about seven and one-half percent, eleven million people, or one person for each eight of working age. By 1975, it is estimated that it will be one person to each five of working age.\(^1\) By that time,

however, it is possible that the upper and lower limits of the traditional working period may be changed somewhat.

Accompanying this development has been the increase in emphasis on security in the minds of our population. Many authorities have pointed to the early 1930's as the beginning of a social revolution, one that is still in its early stages. Laboring men, led by their unions, are demanding economic security from their employers. The reader will perhaps recall the efforts of Dr. Townsend, who appeared certain that a flat-benefit, government-financed pension to all persons over 65 was the solution to most of the economic troubles of the times. This theory, laughed at in the 1930's may be closer than we think, although it may mature under some other name. A flat minimum pension for every aged person regardless of contribution or need appears to many informed persons to be the most economical and efficient means of providing protection for the aged.

The government, labor, and the general public must realize that the cost of pensions, public and private, is even at present a heavy burden on the American economy, and that this burden will grow heavier as time goes on. Security for the aged can be achieved only by increased productivity, by continuing increased output by the working population at a reduced cost. The working population must consume less than it produces in order to support those who no longer produce. As the percentage of people over
65 increases, the problem becomes more and more serious.

This situation has so many facets that only a few can be touched on here. Dickinson has gone so far as to predict a new class war between the young and the old, to replace the one which now exists between labor and management. "Townsendism may be as important in the next fifty years as were the doctrines of Karl Marx during the last half-century." Dickinson also points out that a conscious policy of continuous inflation is directly contrary to the interest of old people who are dependent on fixed incomes, and that as the percentage of voters at or near retirement age becomes larger, we may see a fundamental shift in the attitude of government in fiscal matters over the next several decades.²

Another question that arises is the segment of our economy on which the cost of providing pensions will fall most heavily. This question is particularly important at the present time, when pension development is in its infant stages, where a large number of our population are not covered by any sort of pension, and where those covered only by Social Security will experience little relationship between contributions and benefits.

Theoretically it would seem that the cost, or a

major portion of it, should fall on the employee himself. With regard to this, Boyce\(^3\) makes two points. The first is that the Government, in the form of the Steel Industry Board, has taken a position in favor of non-contributory pensions. Perhaps more important, it is apparent that unions, particularly the CIO, have successfully bargained for non-contributory pensions, and many corporations seem to favor them, in order to maintain a greater degree of control over administration and financing. Secondly, Boyce points out that a large segment of our lower paid population cannot hope to save enough to support themselves after 65, and that outside assistance will be necessary.

On the other hand, to the extent that pension costs represent "deferred wages" and to the extent that contributions to pension funds represent payments made in lieu of wage increases which would have otherwise been paid to employees, the employees are in this sense providing their own pension. Suffice to say that it is certainly not the intent of the labor unions to finance pensions in this manner.

To what extent can industry bear the cost? In other words, can American corporations put into pension

\(^3\)Boyce, Carroll W. *How to Plan Pensions*, op. cit. p. 332.
funds money which otherwise would have been distributed as dividends, or reinvested in the business, thereby increasing productivity?

Generally speaking, it appears that dividend dollars are already at a minimum. The returns on risk investment are already so low as to make equity stocks unattractive, and the result has been a drying up of the market in this type of investment.

To divert funds which otherwise would have gone into increased productivity in the form of industrial expansion, would appear to be contrary to our avowed purpose; that of increasing productivity to the point where our working population can support our aged.

Another possibility is that industry can "pay" for pensions by recovering the costs in the form of increased prices they receive for their product. In this sense, the consumer pays for the pension in the form of increased prices of the goods he buys. Here pensions have the same inflationary result as the wage increases of the past five years. This is perhaps the most painless method, but again we partly defeat our purpose because inflation reduces the value of payment received by pensioners.

The impact on prices of the adoption of pension plans by our basic industries in 1949 and 1950 is not readily discernible. It was feared at the time that
companies might fund their past service credit completely, and if that had happened, the inflationary effect might have been serious. However, the funding of these huge amounts did not occur, and the effect of what past service funding was done was softened by several factors so that the effect on prices is not apparent. It appears now that the effect on prices will be spread over several years, and that other more powerful factors will submerge this effect to insignificance. We might be able to say that the pensions will be "paid for" by productivity increases over the longer period which, according to the unions, is the economic justification for the existence of industrial pensions.

It will possibly be true that the incurring of pension cost and increases in the productivity of labor will occur concurrently in the years to come, but it is entirely another matter to determine the extent to which the productivity increases are the result of pensions. In this dissertation, we take the position that the incurring of pension cost is to be spread over the working life of the employee, because the benefits to the employer will be realized during this period. But in reality this principle is in the nature of a presumption, rather than the result

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4See p. 29.
of any measurable benefits. The writer received general approval of this principle by pension experts, and by company executives, who have had many years to appraise the results of industrial pensions, but all agree that the connection between the incidence of pension cost and measurable productivity increases is remote.

While it may be impossible to determine the segment of our economy upon which the cost of providing pensions may fall most heavily, we can say that pensions will result in a substantial redistribution of our national income in favor of our aged population, and that this burden on our working population will become heavy indeed in the years to come. As the proportion of our population covered under the various forms of pensions increases, the incidence of the cost will become less important, and the total size of the pension bill will become more important.

At the present time there is legislation being proposed to allow professional, proprietors, partners, executives and employees to deduct from taxable income amounts they pay to a restricted retirement fund to provide for their own retirement. The trust would have to be part of a plan set up by an association to which the contributor belonged. The earnings on the trust fund are to be tax free. If it passes, this legislation could induce

rapid expansion of pension coverage, particularly in the high income proprietor and professional groups.

There is an obvious answer to the matter of the increasing longevity of our population, and that is the possibility of increasing the normal retirement age from age 65 to age 68 or 70. Even now there are relatively few pension plans which have a provision for compulsory retirement at age 65, or which at least do not have provisions for retirement at the discretion of the management at that age. It is becoming recognized more and more that a great many people over 65 still have great usefulness in many positions, and that compulsory retirement at an arbitrary age can enforce hardship on both the employee and employer. It appears that there is a tendency now towards a flexible retirement policy, with the decision in many cases to be made at 65 or within a year or so prior to that date, and that the effect of this tendency will be to increase the retirement age in most of the cases.6

The effect on cost of increasing the normal retirement age will be discussed at greater length in a later chapter. It is sufficient here to note that the effect is to reduce cost in two ways: by reducing the length of time during which the pensioner receives his annuity, and by

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increase the time over which this smaller cost is to be accrued. In a typical case, the effect of changing the retirement age from 65 to 70 will be to reduce the total cost of the pension by one-third.

REDISTRIBUTION OF INCOMES

Regardless of the particular segment of our economy which may bear the major portion of the burden of the cost of pensions, it is apparent that both Social Security and industrial pension systems will have the effect of placing more purchasing power in the hands of our aged population. The amount of real income shifted in this direction will depend not only on the amount of the benefits paid to retired workers, but also on the price level that exists when the benefits are distributed. It has already been noted that continued inflation can have the result of reducing the value of the payments received by pensioners.

The economic effect of this redistribution of our national income cannot receive full treatment here. Retirement benefits are only one of several methods which may be used to accomplish a more equal distribution of income among the various segments of our population. Graduated income taxes, government subsidies, aid to the underprivileged, etc., all have the objective of "equalization" of real incomes.

The argument in favor of pension systems as a means
of equalizing incomes centers around the advantages to be gained from placing purchasing power in the hands of those who are most likely to spend it. Continued prosperity, the argument runs, is based upon the continued flow of money. Interruptions of this flow, i.e., hoarding, cause a reduction in effective demand for goods, and reduction in employment and income. This economic theory, formalized by Lord Keynes and his followers, has received wide acceptance in recent years and appears to be the basis of much of the economic and political philosophy of our Government at the present time. As it relates particularly to pensions, it is the basis of the proposals advanced by Dr. Townsend, referred to above.

It does appear that increased incomes for retired people will increase the demand for consumption goods. Presumably the amount of income received by these people from sources other than pensions is relatively low, and the tendency would be to spend a large portion of the pension benefit for current consumption. As an aid to stability of our economy, it would seem that this effect is desirable. The question which remains unanswered, however, is whether or not this increased demand can be met by an increased production of consumer's goods. Failure to

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increase our production with a fewer number of active workers can result only in inflation, and the "redistribution" of incomes will be largely nullified.

THE SECURITIES MARKET AND INTEREST RATES

When pensions first became a major issue in collective bargaining and a matter of national interest, many authorities expressed deep concern over the effect of large scale pension contributions to trusts and insurance companies. The presumption was that the funds would be invested in government bonds, and blue-chip industrial bonds, since trusts and insurance companies in many cases are limited by law as to the type of security in which they may invest.

The effect of large scale pension contributions and the investment of most of these funds into high grade securities could be very detrimental to the economy. In the opinion of most authorities, there simply are not enough high grade securities to go around. Yield rates, already considered to be extremely low, would be cut even further. The emphasis on debt financing, and the diverting of funds into the "riskless" investment field would add impetus to an already existing tendency toward the drying up of the equity capital market. Large scale investment in government securities would tend to increase government deficit financing, and bring along with it the attendant evils which many of us believe to exist. Already, trusts
and insurance companies have been forced to accept yields which may eventually threaten their continued operation. This is particularly true of insurance companies, which do not have the usual recourse to fees and service charges, and the result has been a concerted effort to find outlets for insurance company funds into many other investment fields.

To give the reader some idea of the funds involved, a few outstanding examples will be cited. In 1951, of total savings by the nation of seventeen billions, more than two billions represented money accumulated through employer and employee contributions to pension funds. In the 1950 annual report, American Telephone and Telegraph Company reported pension trust funds of $1,231,332,000 for the Bell System Companies, including Western Electric Company and Bell Telephone Laboratories. The 1950 contribution to pension trusts amounted to $137,656,000. The AT&T plans have been in effect since 1913, and all of the funds are in the form of bonds and notes, about 15% of which are obligations of the Bell System.

General Motors Corporation estimated that pension plans will cost the company $67,227,000 annually, based on a thirty-year period of amortization of past service credit.

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Under the new pension agreement with the CIO, United States Steel Corporation estimated in 1950 that their annual pension cost will exceed 60 million dollars. While these examples are the largest companies, we may assume that the cost per employee will be roughly the same throughout the various industries. In 1950 there were roughly seven millions of workers under private pensions. We can also see that if companies should immediately fund all of the past service credit upon adopting the plan, and if all of these funds should be seeking investment in high grade securities, that the effect on the prices of securities and interest rates would be staggering. Many economists and industrialists in 1949 were predicting the collapse of the economy under the weight of union-fostered pension plans.

The long range implications of pensions are too obscure to permit final judgement, and such judgement is not the purpose of this paper, but it does appear at the present time that many of the immediate fears of these people have not materialized. There are several reasons for this. In the first place, pension plan adoptions have not occurred at the high rate which many authorities had anticipated. As stated above, the outbreak of the Korean War, and resumption of inflationary trends took the pressure off of pension demands by union negotiators, in favor of direct wage increases. This situation could be changed quickly, of course, and the trend reversed, but this
depends on a great many factors which cannot be accurately predicted.

Second, it appears that the demand for investment funds has kept pace with the supply of funds seeking investment outlets. The market value of all securities on the New York Stock Exchange has increased over three-fold in the last 15 years. Outstanding government bonds has increased almost ten-fold. Mortgages investments have more than doubled since the end of World War II. Under these circumstances, the amounts invested in pension funds have not been relatively so large as to cause any substantial reduction in yield rates.

Third, the revisions of the Social Security Act in 1950, broadening the coverage and increasing the benefits, acted to reduce substantially the contributions of many companies. Most of the pension plans of our basic industries provide benefits which include Social Security benefits in a fixed total. Increasing the Social Security benefits had the effect of reducing some employers' contributions by as much as one-third to one-half.

Fourth, there is definitely a tendency on the part of many companies to invest a considerable proportion of pension fund assets in common stocks. There is no general

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10 Ibid.
agreement as to how much of pension money should go into common stocks, but more and more companies are proceeding on the theory that the likelihood of greater income from such investments will more than compensate for any losses that might result from market fluctuations in stock prices.

Undoubtedly two important factors which have led many companies to this conclusion are the continued depression of bond yields, and the threat of continued inflation. Without attempting here to discuss the merits and demerits of this policy, we can say that the tendency towards increased investment in common stocks does exist, and that the effect undoubtedly will be the lessening of the pressure to reduce yields on the "riskless" securities.

Whether or not pension funds will continue to grow at a rate which will be slow enough to avoid serious dislocations is a question which depends on many variables. Most authorities believe now that the seven millions of covered workers will grow to not more than ten millions by 1960. If this holds true, presumably the rate of growth of funds will be slow enough that the investment market will not be affected appreciably.

This is not to say that the investment of pension funds at adequate yields commensurate with a minimum of

11 For example, See Greenough, W. C. A New Approach to Retirement Income. Teachers Insurance and Annuity Association of America, New York: 1951.
risk does not constitute a serious problem. It means merely that the establishing of pension funds will probably not in itself cause serious repercussions in the investment market, as long as the present rate of growth is maintained.

MOBILITY OF LABOR

Considerable attention has been given in the last three years to the matter of the effect of pensions on the mobility of our labor force. Unquestionably some degree of mobility of a labor force is essential to the welfare of any economic society, and if pension plans have the effect of reducing mobility to a point that may be economically and socially undesirable, then this can be one of the most serious consequences of pensions.

From the employer's standpoint, one of the most important arguments that is used in favor of pensions is the development of a loyal, stable working force. It is true that a working force of high turnover is apt to be an inefficient one, and many companies have cited reduction in employee turnover as an important objective of their pension plan.

From the employee (and union) standpoint, one of

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Also, O'Neill, Hugh. Modern Pension Plans. op. cit. p. 4.
the evils of pensions of the type we have today is that of "tying the employee to his job". Pensions may force an employee to remain in a job which is unsatisfactory because he cannot afford to forfeit his pension.

Unions are taking steps along several lines to combat this situation. One attempt worthy of note is the Toledo plan, negotiated between the UAW-CIO and 125 employers of these union members in the Toledo area. Each employer contributes seven cents per hour worked by each of his own employees to a common trust fund. The note-worthy feature of the plan is the cooperating arrangement which lets an employee laid off by one employer-member to take a job with another employer-member without losing the credit earned with the former. Of course this arrangement is limited to the members of the plan in the Toledo area.

Perhaps the best method of handling this problem on an overall basis would be some sort of vesting of pension rights in the employee relatively early in his working life, in the form of a paid-up annuity to commence at retirement date. This arrangement has the effect of greatly increasing the cost to the employer and to reduce whatever advantages there are to the employer of maintaining a stable working force.

Most pension plans now in operation are too recent.
in origin to tell much about their effect on employee turnover. The effect of wars and draft requirements have been so strong that the effect of pensions on employee turnover cannot be isolated. Most employers interviewed were of the opinion that the pension plan had little effect on turnover, although the point was always made forcibly that adequate information was not available, even in the cases where plans had been in existence for a long time. It was the general opinion that the younger employees, up to age 40, were not particularly interested in pensions, and that the existence of a pension plan had little effect on the employee's decision to change his employment. In the cases of older employees, turnover was substantially reduced, but whether or not the pension plan has a significant effect on this reduction is open to serious question.

Probably the only determinable effect of pensions on employee turnover is the establishing of a relatively uniform retirement age. In some cases retirement at 64 is compulsory, and in others, retirement at 65 seems to be the rule. The effect of this from the employer's standpoint will be discussed in a later chapter. From the standpoint of the economy as a whole, we have seen above that arbitrary retirement at 65 probably has unfortunate consequences, and that in the future we shall see an increasing tendency toward flexibility in this matter.

In summary, industrial pensions have been so recent in origin that their economic effects are not readily
determinable. It appears that many of the evils which were predicted three years ago have not yet come to pass. Whether or not these predicted evils will become realities depends on many variables which are not now capable of accurate prediction.

This situation, then, calls for conservatism and careful planning in the light of the few available facts. It calls for sympathetic cooperation in union-management relations, and in what appears to be the drawing of new economic and social lines between the working population and those who are too old to work. It calls for an increased recognition of the fact that the people who are working must pay the bill for the support of those who are too old to produce themselves, and that this bill cannot be paid by the mere signing of pension agreements.
PART II

THE COST OF A PENSION PLAN
CHAPTER III
CONDITIONS WITHIN THE FIRM

Part II is concerned with the planning of pensions from the employer's point of view, and the interest and responsibility that the company accountant will have in such planning. Here the accountant's role is that of attempting to preserve the financial strength of the firm, and determining and controlling costs. In planning a pension, the company is undertaking a commitment of such long duration and of such large amounts that the problem must be approached with extreme caution. As we shall see, the cost of a pension plan is dependent upon a great many variables which can not be predicted accurately. Pension planners must estimate the future with regard to economic conditions, government regulation and policies, income tax laws, and labor management relations. The entire situation calls for the utmost in care and conservatism, and is one in which the industrial accountant must play a large part.

In order to place limits to the area under discussion, the following chapters will deal only with pensions. Matters of insurance, death and disability benefits and other fringe items will be discussed only as they affect the retirement program. Most of the material in this section is taken from works which the writer has determined
to be more or less standard\(^1\), condensed and arranged in such a manner as to be most useful to the accountant.

It is customary in the pension field to think of "cost" of a pension plan in terms of what might more properly be called "net pension cost". "Total pension cost" could be defined as the sum of the eventual benefits to be paid plus costs of administration. In order to arrive at "net pension cost", contributions of employees, and earnings on invested funds are deducted from "total pension cost". In an attempt to avoid problems in terminology, the author will avoid the usage of a "total" cost concept, and subsequent reference to "cost" of a pension plan will refer to "net cost" which, it is believed, is the general usage of the term. Another deduction which could theoretically be made in arriving at pension "cost" is the amount of income taxes saved as a result of the pension plan. While tax considerations will be a major factor in the remainder of this paper, it is not customary to refer to pension "costs" as the amount which is net of applicable income taxes, and the author will refrain from this usage.

\(^1\)Prentice Hall, Inc. Pension and Profit Sharing Service. op. cit.
Boyce, Carroll W. How to Plan Pensions. op. cit.
WHY WE HAVE PENSION PLANS

One of the most important questions asked of many employers was the reasons why a pension plan for employees was considered desirable, and the circumstances which led to the adoption of their pension plan. The question was of course not pertinent where plans were adopted as a result of negotiations with the union, and particularly where the plan adopted was one which conformed to a union pattern. In other cases, employers adopted plans in anticipation of union demands, and wished to have a plan in which union participation in planning and administration could be held to a minimum. In these cases, the objective of the plan was usually one which would satisfy the union with minimum cost to the company.

When this question was put to employers who had adopted plans entirely as a result of their own decision, the answers received were difficult to evaluate. In many cases, there was no opportunity to talk to the persons who were responsible for the original adoption. Three points, however, stand out above all others.

First, employers have had retirement problems for years, whether or not they have been formally considered as such. Employers have considered it necessary to provide for employees who are too old to perform their regular duties. In many cases, these employees were maintained
on the payroll and given easier, less responsible positions, usually at a pay rate which exceeded the benefit to the employer of the job performed. Employees who were no longer able to work at all continued to receive periodic payments, the amount of which was largely determined on the basis of need. As corporations became larger and older, and the number of these superannuated employees increased, there was felt a need for a more formal, uniform treatment for these people. In this sense, many pension plans may be thought of as a mere formalization of a policy which had already existed.

Secondly, with respect particularly to the plans adopted since 1942, the income tax influence must be emphasized. The income tax laws were drafted with the idea that industrial retirement systems are socially and economically desirable, and everything possible was done to influence employers to adopt plans which would qualify under Section 165(a) of the Internal Revenue Code. In very brief summary, the tax saving takes the following forms:

1. Contributions by the employer to a tax exempt trust are deductible by the corporation at the time of contribution. Therefore the employer may deduct from his

\[2\text{Section 23(p). Internal Revenue Code.}\]
contributions to the plan the resulting decrease in his federal tax liability to arrive at the net outlay required by the plan.

2. The earnings of the trust fund are exempt from tax. 3

3. Distributions to a retired employee are taxed as the amounts are distributed or made available to him, presumably when his income is in the lower brackets, and is therefore taxed at a lower rate. If the employee receives his interest in a lump sum due to separation from service, the lump sum is taxed as a capital gain, when the distribution is made from a qualified trust. 4

These tax benefits cannot be ignored. Undoubtedly tax factors have been the most important single item in the development of industrial pensions in the last decade. There are a good many non-qualified plans still in existence, but most of them are plans which were adopted many years ago when tax rates were relatively low. There have been very few non-qualified plans adopted since 1942, although data on these plans is inadequate. 5 Unless otherwise indicated, plans referred to here may be assumed to be qualified plans.

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3 Section 165(a) Internal Revenue Code.
4 Section 165(b) Internal Revenue Code, Regulations 111 para. 29. 165 - 6.
Finally, there are currently realizable business advantages to the employer in the form of improved personnel relations and employee efficiency. These benefits will be discussed at some length in later chapters, particularly in Part III (see p.181), and only a general comment is required at this point. While most persons interviewed emphasized the fact that there were benefits to the employer, these benefits cannot be measured in terms of dollars. They are intangible, and vary widely from one firm to another. For example, reduction in employee turnover is usually listed as one of the most important of the benefits, but some employers doubted if the pension plan had any effect on turnover at all. In any event, the point would be difficult to prove.

The first step, then, in planning the pension is determining whether or not the company has a retirement problem, and if so, whether or not a pension plan can solve the problem. It should be emphasized that the income tax benefit is not in itself sufficient motive, although the writer has interviewed a few people who implied that no other motive was necessary. Further, employers should be extremely careful to avoid expensive schemes which appear to be cheap only because current tax rates are high. An employer may not discontinue his plan or amend it to reduce the benefits, without incurring the possibility that his prior years' deductions will be
disallowed retroactively in all open years. Furthermore, the employer who discontinues a plan may create more ill-will among his employees than the goodwill initially furnished by its adoption. It has been emphasized earlier that pension planning must be on a long term basis, and that point is not minimized by high tax rates.

An employer may wish to recognize a pension problem with respect to one group of employees within the firm, and not to another, or he may have separate pension plans for separate groups. This is acceptable for income tax purposes, as long as the plans are not discriminatory, within the meaning of the law. For purposes of determining whether or not a plan is discriminatory, each plan must be considered independent of the others. The Commissioner may approve any classification of eligible employees which does not discriminate in favor of the employees who are officer-stockholders, supervisory, or high paid employees. For example, plans may cover only salaried employees, employees at a stated plant or division, male employees, employees earning over $3,000 per year, etc. The law does not intend that such groups be automatically acceptable. It means merely that if such groups do not result in discrimination, the plans will be

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6 Section 165(a)-4, Internal Revenue Code.
Having determined that the need for a pension plan exists, either with respect to all employees or a portion of them, the design of the particular plan will depend on what the company can afford, in the light of the benefits to be derived.

AGE DISTRIBUTION AND PRIOR SERVICE OF EMPLOYEES

The problem of retirement usually makes itself known in the business firm under circumstances which are least desirable from the standpoint of costs. Many employers, particularly in the small companies, adopted pension plans at a time when a relatively large number of older, more faithful employees were approaching the age when they would no longer be able to handle their regular duties. It is this situation which is the most costly, since a shorter than average period of time is available over which the cost is to be accrued and the funds provided. The difficulty is increased where the benefit is based on length of service, and there are many long service employees at the time the plan is adopted.

This so-called "past service cost" will be dealt with at some length in Part III, but it should be obvious that this temporary burden will have the effect of reducing the benefits which otherwise would have been considered desirable, and within the means of the firm. The plans
of several firms visited by the writer provide a retire-
ment benefit based on past service at a rate lower than that
based on current service. In one way or another, it appears
that employees with any substantial past service at the
time of adoption of the plan will be penalized, in the sense
that they will receive a smaller retirement benefit as a
result of the heavy past service burden. This should lend
weight to the argument presented in Chapter XI that "past
service cost" is not a cost applicable to prior periods,
but rather one to be accrued from the date of adoption to
the date of retirement.

RATE OF EMPLOYEE TURNOVER

In plans where there is no vesting in the employee
prior to retirement, benefits will not be paid to those
employees whose employment is severed prior to retirement.
In estimating costs, therefore, the ideal calculation would
consider only those employees who will work to retirement.
This involves predicting the rate of turnover in the covered
group.

In group annuity plans, insurance companies do not
"discount for turnover". Contributions are made each year
for each covered employee. When an employee severs empl-
ployment prior to retirement, the amount contributed in his
behalf in prior years is deducted from the current contri-
bution.
In trusteed plans, most of the larger firms estimate turnover on the basis of past experience. This matter requires considerable judgement and should be done conservatively, for past experience may not be an indicator of future experience. If the pension plan accomplishes one of its avowed purposes, the rate of turnover will be reduced by the very fact that the plan was adopted. Also, from the economic, political, and labor aspects, past experience is a poor indicator of what may be expected in the future.

As a rule, smaller firms do not discount for turnover for purposes of computing contributions to trusteed plans. Usually, adequate data on past experience is not available, and even where it is available, it is probably not usable, for reasons noted above. Further, there is considerable danger in underestimating costs in cases of small firms, for a considerable period might elapse before the differences between actual and estimated turnover would come to light.

However, the ideal cost calculation should include estimated turnover as one of its assumptions, for a failure to do so results in a conservative approximation and must be recognized as such. This is particularly important for accounting purposes, as we shall see in Part III, and perhaps equally important for purposes of funding.

The problem of employee turnover can be minimized
by excluding the high turnover employee groups from eligibility. These groups are normally the younger employees with little past service. The maximum "waiting period" allowed by the tax laws is 5 years. A minimum age limit for eligibility has the effect also of reducing turnover of eligible employees. It is not at all uncommon to find plans which limit coverage to those employees who have from 2 to 5 years prior service, and are at least 30 or 35 years of age. For accounting purposes, the effect of these provisions will be to limit the amount of error in the cost calculation induced by failing to discount for turnover, or for estimating it incorrectly.

Another way of avoiding the difficulties in predicting turnover is to have full and immediate vesting of the benefits in the employee. In such a plan, the full amount accrued is paid to the employee on severance of employment, and the employer receives no benefit from turnover in the form of reduced pension cost. This matter will be dealt with at greater length in Chapter V.

SEX AND RACE OF WORKING FORCE

It has been found that for a rather wide range of ages, a female has the same number of years to live, on the average, as a male 5 years younger. For example, according to the 1937 Standard Annuity Table, a male age
65 will live 14.40 years. A female aged 65 has a life expectancy the same as a male age 60, or 17.55 years. This fact will have to be considered in calculating the cost of a pension plan when the percentage of female employees is high. The problem is made more serious where consideration is given to retirement of female employees at an earlier age, such as 60. Not only is the life expectancy longer, but the time available to accrue the cost is shorter. A pension plan limited to male employees is acceptable for tax purposes, so long as it does not have a discriminatory result, as outlined above.

Roughly the same observations hold true for colored workers. Although high death rates in the children's ages hold down the total life expectancy of Negroes, once a colored worker has survived childhood, the life expectancy is greater than that of whites.

SALARY SCALES

The prediction of salary scales at various levels of employment is not necessary in those plans where the benefit is a flat amount, say $100 per month, or in those plans where the amount of the benefit is based entirely on years of service. In all other plans, and making up the large majority, benefits are computed in such a way as to give weight both to length of service and the compensation of the employee. In a few others, benefits are
based entirely on compensation, for all employees having a
minimum number of years of service. Examples of types of
benefit formulas based on compensation are:

1. Percentage of each year's pay (e.g., 1%) times years of covered service.

2. Percentage of final pay times years of service.

3. Percentage of average pay for last 10 years times years of service.

4. Percentage (e.g., \( \frac{1}{2} \% \)) of first $3,000 of pay, plus a percentage (e.g., 1\( \frac{1}{2} \)%\) of pay in excess of $3,000 times years of service.

5. Percentage (e.g., 30%) of final pay for all covered employees having at least 20 years service.

While each of these cases presents a different actuarial problem, each requires that an estimate of future compensation be made in order to compute the benefits at retirement.

This, it would seem, is an almost insurmountable task. Prediction of wage rates for years to come would involve the prediction of almost every other economic variable at the same time. Some firms have based calculations on the average or final salaries of currently retiring employees, which amounts to the assumption that general wage levels in the firm will not change. Other firms have used what has been described to the writer as
the "crystal ball method". At best, one may interpret this to mean that the actuary has used some system of salary prediction of which the person interviewed was not aware.

Fortunately, this problem has a convenient and logical solution which is acceptable for accounting purposes. The solution is to compute retirement benefits for each employee on the basis of his current salary. As long as his salary does not change, the amount accrued each year will equal the value of his benefit at retirement. When his salary increases, the increase in retirement benefit resulting from increase in salary is considered to be a cost of the periods following the salary change. The same line of reasoning would apply where a wage increase is granted to the entire working force.

Parenthetically, one may anticipate some far-reaching implications to this line of reasoning. When an increase in pension cost must be added to the increase in direct compensation in order to determine the total cost of a pay raise, we may find managements stiffening their resistance to pay raises, both in cases of merit raises for individuals, and for an additional "round" to the union. Many firms have prepared tables indicating the increment to pension cost resulting from various pay raises at various ages. These data are consulted whenever the question of pay increases presents itself.
CHAPTER IV

ACTUARIAL ASSUMPTIONS

All of the factors mentioned in both Chapters III and IV are usually termed "actuarial assumptions". Those discussed in Chapter III are governed primarily by conditions within the particular firm, and are apt to vary widely between one firm and another. There the actuary must depend almost entirely on the experience of the individual firm and on the data furnished to him by the management. In this Chapter, the assumptions are those in which the actuary uses more of his own judgement, and are those which are more likely to be uniform among various firms.

Nevertheless, the responsibility for the decisions on these matters must rest with the management, and many managements have been lax in this matter. Many company executives are ignorant of even what assumptions the actuary had made, not to mention whether or not they believed such assumptions were valid. The actuary is an expert in his field, but he is not a soothsayer. There is nothing in the training of an actuary which qualifies him to predict economic conditions, interest rates, and like matters. Business managers are shirking their responsibilities if they do not learn of the alternatives available in making these decisions, and form some judgement as to their relative merits.
MORTALITY

In estimating the cost of a pension plan, we are interested in computing retirement benefits only for those persons who survive to retirement. We are also interested in the average length of time a retired employee will live after retirement, i.e., the average length of time he will receive benefits. Both of these calculations involve the use of mortality tables.

The only major problem to be solved here is the choice of the mortality table to be used. Several alternatives are available, and the differences are extremely important. If the individual firm is old enough and large enough, individual mortality experience may be better than the use of one of the generally accepted tables. Some of the more widely used tables are:

1. 1937 Standard Annuity Table.
2. Combined Annuity Table (1928).
3. Commissioners Standard Ordinary Table (1941).
4. American Experience Table (1868) (out of date).

Most insurance companies use the 1937 Standard Annuity Table, some setting the table back one year to provide for increased longevity since the table was prepared. Insurance companies also reserve the right to revise the group annuity rates every 5 years, to allow for (among other things) differences in mortality.
It is interesting to note that mortality rates for
insurance purchasers are significantly higher than for
annuity purchasers\(^1\), and insurance mortality tables are
generally not usable for pension cost purposes.

Small firms have an additional problem in discounting
for mortality, since the risk of variation of actual
mortality experience from the rates predicted in the table
varies inversely with the number of employees. One solution
is to compute costs on the assumption that all employees
will live to retirement and record "gains" resulting from
employee deaths as reduction of cost in the year of the
death. This approach will invariably result in an over-
estimation of cost, except in years in which an unusually
large number of deaths occur. Funding on this basis is not
deductible for tax purposes in the year of the contribuion.\(^2\)

INTEREST

As we have noted above, interest earned on funds
invested have the effect of reducing pension costs, and
therefore must be estimated in advance. This problem is
so closely related to matters of financing and, to some

\(^1\)Bureau of National Affairs. \textit{Handbook for Pension
Planning}, op. cit. p. 155.

\(^2\)Prentice Hall, Inc. \textit{Pension and Profit Sharing
Service}, op. cit. para. 5042.
extent to the assumptions on which the accounting entries are based, that it is difficult to discuss the matter of interest assumption independently. The question of the treatment of interest earned, interest assumed, and the differences between these two will appear repeatedly throughout the thesis.

Fundamentally the choice of an assumed interest rate will depend upon the investment policy of the firm. As we shall see later, many firms have been investing a substantial portion of their pension funds in high grade common stocks. Others have "invested" heavily in their own securities. Furthermore many firms have not been consistent in their investment policies. One large firm interviewed by the writer is apparently "playing" the stock market in short term transactions, a policy which would not appear to be in keeping with the theory of a pension fund. The problem of choosing the estimated interest rate gives rise to problems of the basis on which the securities are to be valued, the treatment of gains and losses due to market fluctuation of securities, inflationary problems, and others.

The best that the management can do at the outset is to make a conservative estimate on the basis of whatever long-term investment policies are intended. The lowest interest assumption acceptable for tax purposes at present is two percent. However this rate would not be acceptable
if, for example, a significant proportion of the funds were invested in obligations of the employer and his affiliates which yield considerably more than two percent. 3

It must be kept in mind that the objective is to choose an earning rate which will come as close to the actual earnings as possible, without regard to Treasury Department rulings. As will be explained later, tax deductions may be obtained under a set of rules which may or may not apply to the individual firm. The choice of an interest rate will in most cases be an extremely important element in any cost calculation. For example, at four percent interest, $10.26 will buy an annuity of $1 per year at 65. At three percent the cost is $11.09. At two percent the cost is $12.05. This represents a fund invested for an average of only 7.2 years. If the fund is set up at age 50, for example, the annuity would cost some 36 percent less at 4 percent interest than at 2 percent.

COST METHODS

The choice of the cost method to be used is most likely a decision which will be left entirely to the actuary. The term "funding method" is sometimes used, and is perhaps a better term, for this is the meaning intended

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3 Treasury Department Bulletin, issued June 1, 1945, reprinted in Pension and Profit Sharing Service, para. 9701.29.
Cost methods, or funding methods, refer to the methods used by the actuary to determine the amount of funds to be put into the pension trust each year, in order to keep the fund "actuarially sound". As we shall see, the concept of actuarial soundness is one of considerable latitude, but some idea of what is meant can be obtained by a brief review of the actuarial problem.

The actuary determines the benefits undertaken by the plan for the individuals who are covered, taking into consideration all of the assumptions with regard to interest, mortality, turnover, age and prior service, salary scales, etc., which have been discussed above. He then computes the present value of all of these benefits. This is the amount required now, to provide all the benefits at retirement, assuming no further contributions. From the present value of the benefits, he deducts the amount of contributions already made, to obtain the unfunded liability. If the present value of contributions to be made in the future on the basis provided by the plan is equal to this unfunded liability, then the pension plan may be considered to be actuarially sound. The underlined phrase above implies that there are various bases on which contributions can be made, each of which may be considered actuarially sound. This section is a discussion of these bases, or cost methods.
The only effect which the choice of funding method has on total cost is in the amount of interest earned on the funds invested. Some funding methods, for example, call for more rapid funding of the past service credit than others. Since the funds are invested for longer periods, interest earned is greater. There are also differences in the way in which current service credit is funded.

Three methods will be discussed: the single premium deferred life annuity method, the level annual premium method, and the level percentage of payroll method. These three are the most widely used, although there are others, and there are varying combinations of these three. The first two of these methods are known as individual funding methods, which means that cost calculations are made with respect to each individual, or relatively small groups of individuals, in the covered group. The sum of the individual cost calculations represents the total pension cost to the firm. In these methods, individual pension records are maintained. The level percentage of payroll method is an aggregative funding method, which means that one calculation is made with respect to the entire covered group. In the aggregative methods, individual records are not usually necessary. Therefore, the single premium method and level annual premium method will be compared directly, while the level percentage of payroll method will be discussed in a separate section.
Single Premium Method vs. Level Premium Method

The single premium deferred life annuity method is best applied to those pension benefit formulas which are directly related to years of service. In this method, the employer contributes each year to the trust or insurance company the full amount required to fund the benefits applicable to the service rendered by the employee in that year. The level annual premium method involves merely estimating of the final benefit, and allocating the cost of this benefit equally to each year of service. Nevertheless, either method can be used with any formula under specified assumptions, as illustrated in the following examples.

Assume that an employee is hired at age 55 on January 1, 1951. If he works to retirement age of 65, he will be entitled to a pension benefit of $1000 per year. The amount which must be accumulated over the ten-year period is $12,403, based on assumptions of 2% interest rate and the 1937 Standard Annuity Table. This can be accomplished by either one of the two funding methods, as follows:
### Single Premium Method

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount Contributed</th>
<th>Compounded at 2% to Jan. 1, 1961</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>$1038</td>
<td>$1240</td>
</tr>
<tr>
<td>1952</td>
<td>1059</td>
<td>1240</td>
</tr>
<tr>
<td>1953</td>
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<tr>
<td>1954</td>
<td>1101</td>
<td>1240</td>
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<tr>
<td>1955</td>
<td>1124</td>
<td>1240</td>
</tr>
<tr>
<td>1956</td>
<td>1146</td>
<td>1240</td>
</tr>
<tr>
<td>1957</td>
<td>1169</td>
<td>1240</td>
</tr>
<tr>
<td>1958</td>
<td>1192</td>
<td>1240</td>
</tr>
<tr>
<td>1959</td>
<td>1216</td>
<td>1240</td>
</tr>
<tr>
<td>1960</td>
<td><strong>1240</strong></td>
<td><strong>1240</strong></td>
</tr>
<tr>
<td>Total</td>
<td><strong>$11365</strong></td>
<td><strong>$12400</strong></td>
</tr>
</tbody>
</table>

### Level Premium Method

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount Contributed</th>
<th>Compounded at 2% to Jan. 1, 1961</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1133</td>
<td>$1354</td>
</tr>
<tr>
<td>1951</td>
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<tr>
<td>1952</td>
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<td>1953</td>
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<td>1959</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td><strong>$11330</strong></td>
<td><strong>$12403</strong></td>
</tr>
</tbody>
</table>

Ignoring the rounding error, either method will accumulate the necessary amount at the retirement date. Contributions for the ten-year period under the level premium method will be less than under the single premium method, since somewhat larger amounts are contributed in the earlier years, and more interest is earned.

The level premium method is the more logical method in the "flat benefit" formula above. In order to use the single premium method, it was necessary to assume that since the employee is entitled to a life annuity of $1000 annually at retirement, he "earns" a life annuity of
$100 annually for each year under the plan, the cost of which at retirement is one-tenth of $12,403, or $1,240, to the nearest dollar. This is an arbitrary assumption, since the benefit formula is not directly related to years of service.

As a second example, assume a benefit formula which provides for a retirement benefit of one percent of average annual compensation times years of service. Assume further that an employee is hired at age 55 at a salary of $8,000 per year, that after 5 years of service his salary is raised to $12,000, and that he is to retire at age 65. His retirement benefit will be $1000 annually (5 times 1% of $8,000 plus 5 times 1% of $12,000). The cost of this benefit will be $12,403, and can be accumulated under either of the two methods as follows:
This benefit formula lends itself to the single premium method, since for each year of service the employee is considered to have "earned" a retirement benefit of a life annuity of one percent of his earnings. Thus, for each of the first five years, the employee has earned a life annuity of $80 annually, the cost of which at 65 is $992. For each of the last five years, he earns a life annuity of $120, the cost of which at 65 is $1,488.

In order to use the level premium method, an assumption must be made concerning the compensation of the employee. In the illustration above, it was assumed in 1951 that the
employee's salary would be $8,000 until retirement, and
that he would receive a retirement benefit of $800 per
year ($8,000 times 1% times 10 years). The cost of this
benefit on a level premium basis is $906 per year. When
the employee's salary is raised to $12,000, it is further
assumed that this new salary will hold until retirement.
Therefore the increase in salary results in an increase
in the average over the ten-year period from $8,000 to
$10,000, resulting in an increase in retirement benefit
from $800 to $1,000. The cost of this $200 increase on
a level premium basis is $477. Therefore the employer
will contribute $1,383 each year for the last five years.

In both illustrations, the difference in total
contributions under the two methods is very slight, be­
cause the ten-year period is shorter than an actual case.
In a typical pension plan covering the entire working
span of an employee, the difference in annual contribu­
tions may be as high as fifteen percent, assuming an
unchanging working force.\textsuperscript{4}

The other significant difference between the two
funding methods is in the handling of "past service" bene­
fit. It will be recalled that the past service benefit is
that which the employee is entitled to receive as a result

\textsuperscript{4}Latimer, Murray W. \textit{Industrial Pension Systems},
op. cit. p. 238.
of the service rendered prior to the adoption of the plan. In terms of funding, past service cost could be defined as the amount that would have been in the fund as of the date of adoption of the plan, if the plan had been in effect from the date the employee would have entered the plan under its provisions. It is this amount which, for tax purposes, can be funded and deducted over a minimum period of ten years.

Where the benefit formula is directly related to years of service, the past service cost is merely the present value of the liability relating to the benefit for the years of service rendered prior to the adoption of the plan, and this amount can be easily computed as of the date of adoption. Where the benefit formula is not related to years of service, such as the "flat benefit" formula in the first illustration above, past service cost can be computed only on the basis of an assumption which relates the benefit to years of service. Assume, for instance, an employee aged 45 as of the date of adoption of the plan who will retire at age 65. Had the plan been in effect he would have been eligible for coverage at age 25. If the retirement benefit is a life annuity of $1,000 annually, the benefit could be funded by level annual premium method as follows; the level annual premium required to fund a life annuity of $1,000 in forty annual payments is $205 per year. If the pension plan had been in effect twenty years
earlier, there would have been in the fund $4,989 when the employee was aged 45, the year of actual adoption. This past service, or "supplementary", cost can be funded and deducted at the rate of $499 for each of the ten years following adoption of the plan.

Under the single premium method, it is necessary to relate the benefit to years of service by assuming that the employee "earns" a retirement benefit of a life annuity of $25 for each of his 40 years of service. Had the plan been in effect twenty years earlier, these "units" of benefit would have been funded in the amounts of $143 the first year, $146 the second year, and so on, so that $3,761 would have been in the fund in the year of actual adoption.

In summary, the funding under the two methods would be as follows, assuming that it is desirable to fund and deduct the past service credit over the ten year period:
<table>
<thead>
<tr>
<th>Year of Plan</th>
<th>Past Service</th>
<th>Current Service</th>
<th>Total</th>
<th>Past Service</th>
<th>Current Service</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$376</td>
<td>$213</td>
<td>$589</td>
<td>$499</td>
<td>$205</td>
<td>$704</td>
</tr>
<tr>
<td>2</td>
<td>376</td>
<td>217</td>
<td>593</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>3</td>
<td>376</td>
<td>221</td>
<td>597</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>4</td>
<td>376</td>
<td>226</td>
<td>602</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>5</td>
<td>376</td>
<td>230</td>
<td>606</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>6</td>
<td>376</td>
<td>235</td>
<td>611</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>7</td>
<td>376</td>
<td>240</td>
<td>616</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>8</td>
<td>376</td>
<td>244</td>
<td>620</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>9</td>
<td>376</td>
<td>249</td>
<td>625</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>10</td>
<td>376</td>
<td>254</td>
<td>630</td>
<td>499</td>
<td>205</td>
<td>704</td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>259</td>
<td>259</td>
<td>0</td>
<td>205</td>
<td>205</td>
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<tr>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
</tr>
</tbody>
</table>

It must be remembered that the ten-year amortization period is a minimum period only. There is no maximum period. For example, it would be perfectly proper to fund the entire benefit, current and past service, by the level premium method from the date of adoption to the date of retirement, in which case the cost would be $543 each year for twenty years.

It is perhaps desirable at this point to remind the reader that the most desirable funding method is not necessarily the most rapid merely because it earns a maximum amount of interest. Whether one funding method or the
other is the most desirable would depend on the alternative uses to which the funds could be put by the firm. This is primarily a matter of cash budgeting.

The matter of tax saving must also be considered in determining the choice of one funding method over the other. This additional factor introduces, first, the problem of determining the taxability of earnings resulting from the various uses to which the funds could be put (as compared to earnings of the pension fund which are tax-free), second, the effect of the tax bracket of the employer under existing rates, and third, the effect of a possible change in tax rates in future years.

Further, it has been indicated above that only two of several methods have been discussed at this point. Matters of cost, cash budgeting, and tax planning will be dealt with in the chapters on financing.

Level Percentage of Payroll Method

It will be recalled that this method is an aggregative method which means that it is applied to the total payroll, and not to individuals. Therefore, it can not be compared directly to the two methods described above.

The level percentage of payroll method is essentially that of determining the present value of all future benefit payments, less the amount of funds which have already been contributed in the past, and distributing this cost over the future as a percentage of annual covered payroll.
This percentage is usually called the "accrual rate". The accrual rate can be expressed arithmetically as follows:

\[
\text{accrual rate} = \frac{\text{present value of future benefits} - \text{amount contributed to date}}{\text{present value of future covered earnings}}
\]

The annual cost is then determined by applying the accrual rate to the covered annual payroll, and the resulting amount is contributed to the trust fund.

Under this method, as in the level annual premium method, past service cost is not explicitly recognized. It can be calculated, however, by assuming a normal entry age. The "normal cost" is what the cost would have been if all employees had entered the plan at that age, and this cost is expressed as a percentage of covered payroll. Any excess cost is then presumed to be due to "past service" and can, for tax purposes, be amortized over the ten-year period.

Combination of Methods

The problem of the choice of the proper method of funding depends on the circumstances of the individual case, and, as mentioned above, is a problem which can best be solved by the actuary. Various combinations of methods may also be used, even for a single plan.

For example, most of the union-negotiated plans with the major companies call for minimum pensions to be paid to those who, under the negotiated formula, would not
receive what is considered to be an adequate pension. The difference in cost, represented by the excess of the minimum pension over what the employee would receive by applying the formula, might be funded under one method, while the formula would be funded by a different method.

We are not yet in a position to discuss the accounting problem which is made evident by a preliminary discussion of the basic cost methods. It should be apparent that all of the methods described above cannot be acceptable for accounting purposes, even though each one is "actuarially sound". Variations of these methods, some of which are not actuarially sound, are discussed in Chapter X.

However, we have not yet finished the problem of planning the pension, and discussing the effect on cost of the various decisions which will have to be made.
CHAPTER V
THE PROVISIONS OF THE PLAN

The provisions of the plan are being discussed as the last step in the process of pension planning to emphasize the point that they must be "tailor-made" to the needs and conditions within the firm, and to conditions of mortality and interest which are expected to exist in the future. Only in this way can the management plan intelligently.

The primary interest of the accountant in the planning process is cost control. Once adopted, a pension plan is very difficult to terminate, and very difficult to amend, if the amendment involves a reduction in benefits or contributions. The ill-will incurred as a result of scaling down benefits to meet the financial ability of the firm can very well more than offset any goodwill created by the original adoption. Every effort should be made to provide in the plan for as much flexibility as possible, but the management should recognize at the outset that amendment or termination of the plan will be decided upon only with great reluctance.

The income tax effect of amendment or termination of a plan is very important. Internal Revenue regulations require that a pension plan shall be "permanent", within
the meaning of the law. In the case of amendment, any decrease in employer liability may create doubt as to the permanence of the plan. Unless the amendment can be justified on the basis of "business necessity," the Commissioner may conclude that "partial termination" of the plan has occurred. The term "business necessity" has reference to adverse business conditions, not within control of the employer, and not foreseeable when the plan was adopted. Generally, the same rules apply to either abandonment or partial termination as far as the "business necessity" rule is concerned.

Failure to prove business necessity results in retroactive disqualification of the plan. This means that the Commissioner may disallow deductions for pension contributions for all prior years not barred by the Statute of Limitations. Further, there would be retroactive taxation of contributions to the participants, to the extent that they would have been taxed under a non-qualified plan.

On the other hand, benefits can be liberalized and coverage expanded with little difficulty, as far as the tax law is concerned, so long as the anti-discrimination pro-

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1 Regulations III, Section 29.165-1.
2 Pension and Profit Sharing Service, op. cit. para. 4213.
3 Ibid.
visions of the law are met.

Therefore, from the standpoint of control of costs, and the tax law, it would seem that the firm would be in a better position if it starts with a modest plan, and expands it only when the financial condition of the firm will allow it, and only when the inadequacy of the plan becomes obvious. The Pension and Profit Sharing Service observes that "the excuse that a company let itself be 'sold' on the idea of a pension plan, and that it did not fully realize the obligation it undertook when it adopted the plan, would most likely not be recognized as business necessity". 4

ELIGIBILITY REQUIREMENTS

There are three objectives to be attained in the establishing of eligibility requirements. They are 1) ease of administration, 2) cost minimization, and 3) qualification under Sec. 165(a) of the Internal Revenue Code.

Ease of Administration

The primary objective here is to limit the eligibility to the low turnover employee groups. The principal restrictions are usually a minimum age requirement or a

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4 Ibid.
minimum period of service, or in many cases, both. In addition, it is usually desirable to eliminate part time, seasonal, or transient workers. These requirements are particularly important in insured plans, where there may be a surrender charge incurred upon termination of employment.

Cost Minimization

The minimum age requirement will limit the cost of the plan, where the benefit to be paid is related to years of service since there will be no benefit for service prior to admission. In addition, some pension plans exclude women employees, primarily because women generally are not relied upon to support a family unit in their old age. In addition, pension cost for females is higher, due to increased longevity.

Many plans have an upper age limit. The purposes of this provision are first, to limit the past service cost for long service employees at the time of plan adoption, and second, to establish a minimum length of time over which the employer may fund a pension benefit for an employee close to retirement.

In addition, pensions may be limited to particular groups, such as all union employees, or all non-union employees, or all salaried employees, as opposed to hourly workers. These distinctions can arise as a result of cost considerations, or from situations where an employer has more than one pension plan.
Finally, there must be a definition of what constitutes continuous employment. Discharge for cause, absence without leave, infraction of shop rules involve forfeiture of pension rights in many cases.

Qualification under Section 165(a) of Internal Revenue Code

The only problem involved in qualifying a plan, with regard to eligibility requirements, is qualification under the anti-discriminatory provisions. The Revenue Act of 1942 laid down two rules, the Arbitrary Rule and the Discretionary Rule.5

The Arbitrary Rule provides that the employer may exclude, if he chooses:

1) Those persons who have not been employed five years or more, and
2) Those persons who are customarily employed for not more than five months in any calendar year.

Of the remainder, 70% must be permitted to become eligible. Then, in order to qualify, at least 80% of those permitted to become eligible must actually join the plan.

The Discretionary Rule provides that the Commissioner may approve any classification of eligible employees which does not discriminate in favor of employees who are officers,

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5Internal Revenue Code, Sec. 165(a)-4.
stockholders, supervisory employees, or high-paid employees.

THE RETIREMENT INCOME

One of the objectives of the research study conducted by the author was to get some idea of what business leaders considered to be the proper amount of pension income. This question is closely related to the more general question of what a pension plan is supposed to accomplish, but the differences in phrasing brought forth different answers, and the author found that this phrasing shed considerable light on the first more general question which, as indicated above, produced inconclusive results.

Without exception, the employers interviewed did not believe that an industrial pension should provide the retired employee with any given minimum standard of living. This, they said, was not the main function of the pension plan.

Here we may point out what appears to be an essential difference between the objectives of industrial pensions, from the employer's standpoint, and Social Security. In the opinion of most authorities, the objective of Social Security is the avoidance of poverty in old age, and the maintenance of some minimum subsistence standard of living for the maximum number of people.6

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6Boyce, Carroll W. How to Plan Pensions. op.cit. p. 226.
What, then, is the objective of industrial pensions, if it is not to provide a minimum standard of living to all retired employees? The answer, according to the employers, is that the pension benefit is compensation for services rendered, the payment of which is deferred to retirement. The reasoning and justification for pensions, seems to be somewhat as follows. Present economic conditions make it very difficult for an employee to provide for his own retirement. High income taxes and low interest rates make it difficult for even a thrifty person to accumulate enough to provide for his retirement. Continuous, "creeping" inflation encourages free spending of all income. Here, in the form of an industrial pension, is an opportunity to provide the employee with a relatively tax-free wage increase, and provide for an accumulation on which the employee can depend when he is no longer able to work.

The tax laws are in accord with the "deferred wages" concept of pension benefits. A contribution to a pension plan is in the nature of compensation for personal services rendered by the employee and represents an item of business expense. Therefore, the contribution plus all other compensation paid to employees must represent an ordinary and necessary business expense. In addition, it should be noted that any contributions in excess of the
amount required to provide a reasonable pension are not deductible. The law goes on to say, however, that what constitutes a reasonable pension will depend upon length of service, compensation otherwise paid, and retirement age. 7

Some pension experts, mostly those who are in the business of selling pension plans to firms, seem to have a somewhat different idea. Some look upon industrial pensions as an addition to a Social Security benefit which, by itself, is inadequate to maintain an adequate standard of living. One pension expert expressed this feeling as what he thought industrial pensions should be, not what they are.

Most labor unions agree with this latter view. The drive of the United Auto Workers for a flat benefit $100-per-month for each employee does not appear to be a drive for security. Boyce8 suggests that the flat benefit pension is not what the union leaders really want. The "$100 a month at 65" is a good slogan, and a popular one with the rank and file, but the real objective, it is contended, is the establishment of a flat benefit as a minimum only, and that later demands will involve additional pension

7 Pension and Profit Sharing Service, op. cit. para. 5015.
for employees of long service and higher compensation. Further, a flat pension of $100 per month including Social Security benefits is relatively inexpensive for the employer, particularly since the 1950 revision of the Social Security law.

We can detect a very fundamental conflict in the thinking of the various groups concerning industrial pensions. It is unrealistic to deny the existence of the labor union drive for security in old age, regardless of service rendered. The unions are trying for both security and for a deferred wage increase, but if we must choose one of the two motives as being the stronger, the writer would vote for security. As evidence we can point to stubborn union resistance to fixed-contribution, variable benefit plans (to be discussed in Chapter VI), profit-sharing plans, and the like. In these plans, benefits are not guaranteed, the amount of the benefit is difficult, sometimes impossible, to compute, and company contributions to the trust may be contingent. Some of these plans are very successful today in providing benefits sufficient to provide retirement income, but they are not approved by the unions in our basic industries. Unions are willing to accept pensions based on compensation and years of service, only when such formulas are accompanied by a minimum pension which the union considers adequate as a starter.

We must conclude, therefore, that the "deferred
wages" concept of pensions is the employer's view, and a view adopted by the National Labor Relations Board primarily as a matter of expediency. Perhaps we can hope that sometime in the future the view will be generally accepted, and that retirement plans can be established on that basis. This time has not yet arrived, however.

If it is the employer's view that pension benefits should be primarily a payment for services rendered, then the pension benefit should be related to both years of service, and to compensation. This line of reasoning has led to the "percentage of income times years of service" formulas. Most plans incorporate this formula with a minimum pension for employees of short periods of service.

The "percentage of income times years of service" formulas are sometimes objected to on the grounds that the highly skilled men who are hired late in life because of their special qualifications do not receive an adequate pension. To overcome this objection, some firms have used a combination of percentage income for each year of service formula based on percentage of salary, regardless of years of service. This is called the "Churchill Formula", devised by E. S. Churchill of Hartford, Connecticut.9

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9Pension and Profit Sharing Service, op.cit. para. 7015.
Relatively few plans have benefit formulas based on salary only, regardless of years of service, to be paid to all employees with a minimum of years of service, such as 10 years. The justification for this type of formula is that it automatically compensates for changes in the value of the dollar, to the extent that salaries reflect this change. These plans are expensive for employees hired late in life, and benefits are out of proportion to years of service.

Most plans consider the fact that employees are also to receive Social Security benefits at retirement. If this is not done, then the low paid employee receives a much higher total pension, relatively, than the high paid employee. There are several ways of "integrating" the Social Security benefit. One method merely deducts the Social Security benefit from the pension payable, so that the sum of the pension and Social Security will equal the pension as computed by the formula. This involves, in computing costs, the problem of either predicting what the Social Security benefits will be, or using the current benefit scale, on the theory that credits will be taken in the future for increases (or charges for decreases) in Social Security benefits. A third method which does not involve a problem of prediction is that of devising a pension benefit formula providing a lower
percentage on earnings up to $3600, and a higher percentage on earnings over $3600.

Another problem in fixing the benefit formula is the recognition of past service. Many firms cannot afford to provide retirement income on an otherwise acceptable formula for employees who have many years of service at the time the plan is adopted. Some firms have reduced the overall formula because of heavy past service, with the thought of increasing the benefit later, after many of the long service employees have retired. Others have devised formulas which provide a lower rate on past service than on current service. Another method is to establish an upper age limit for eligibility which will exclude all present workers over a certain age. Finally, a schedule of deferred retirements can be established for workers over a certain age (usually 55) at the date of adoption.

Whatever formulas are proposed, it is the responsibility of the management to establish a financially sound plan. Perhaps this can never be assured, but the question of cost must always be uppermost in the minds of the employers. Some authorities have suggested that the point of view at the bargaining table should be to negotiate the cost, and let the benefits fall where they may. This point of view will be dealt with in detail in Chapter VI.

Finally, there is the tax problem. In addition to
the "reasonable" requirement mentioned above, the employer must devise a scale of benefits which will not "discriminate in favor of officers, stockholders, supervisory, or highly-paid employees". Up to now, each case has been decided on its own merits, and the standards which the Commissioner has established for discrimination are so detailed that a general statement is not possible. The planning aspect of this problem is a matter for the tax expert, and is a problem which can not be elaborated upon here. It must be kept in mind in planning that even though a plan may originally be accepted as qualified, the contributions may later be disallowed if the particular formula has a discriminatory result. Thus a formula might be allowed in one case and disallowed in another.

It should be noted here that the anti-discriminatory provisions of the tax law must be considered carefully in many of the phases of pension planning in addition to the benefit formula. **Pension and Profit Sharing Service** makes the following general statement:

"The principle that a provision (of the plan) must not discriminate in favor of officers, stockholders, supervisory, and highly-paid employees in actual practice as well as on paper is so representative of the Commissioners' attitude that it is recommended that it be used as a test for every provision of the plan. The regulations state that the law is concerned not so much with the form of the plan as it is with its effects in operation (Reg 111, para. 29.165-1). If a clause may remotely discriminate as to contributions or benefits or in any other respect,
safety would require the insertion of a provision preventing the discrimination.\textsuperscript{10}

The phrase "in any other respect" is a word of warning that eligibility requirements, vesting provisions, retirement age provisions, employee contributions, and the like must be examined in minute detail, not only individually but as a part of a whole, to determine whether the result might possibly be discriminatory.

DEATH AND DISABILITY BENEFITS

This is a problem which is not of major interest to us here. It is discussed briefly only because many employers have incorporated these benefits with the pension plan, and such benefits are paid from the same funds as the retirement fund. Many experts are of the opinion that the problem of retirement and the problems of death and disability should be dealt with separately. Many employers have incorporated death and disability provisions with retirement, either because the unions have insisted upon it, or because, in the employer's view, they can be handled more cheaply in this manner. Most firms handle the problem of death benefits by some form of group insurance independent of the retirement program. With rare exceptions, disability pensions provided for in

\textsuperscript{10}Op. cit. para. 4023.
negotiated contracts are sufficiently limited by age and service requirements as to be little more than "early retirement" pensions. 11

The amount which will be added to cost will, of course, depend entirely upon the amount of the benefits and the eligibility to receive them, and there are many possibilities. In most cases, the enormous increase in cost resulting from these benefits is startling, and will greatly discourage their inclusion in the pension plan. One illustration, 12 for example, shows that in a common type of pension formula providing for full vesting upon death of all contributions made plus interest would more than double the cost of the plan.

Without any exceptions known to the author, contributory plans call for return of employee contributions upon severance of employment, whether by reason of death, disability, or any other. In addition, interest at a stated rate is also usually paid. This provision has the effect of minimizing the reduction in cost of contributory plans over non-contributory plans.

VESTING

The problem of vesting, as contrasted to death

11 Boyce, Carroll W. How to Plan Pensions. op.cit. p. 120.
and disability benefits, is an integral part of the pension plan. Vesting is the process of giving an employee a permanent right or interest in the contributions the employer has made in his behalf. The return of employee contributions, with or without interest, is considered to be in addition to whatever vested right the employee has.

If we accept the employer's view that pensions are in reality deferred compensation, then it would follow that all plans should provide automatically for full vesting. As a matter of fact, few plans have this provision, primarily because of the cost involved. Many plans, however, provide for partial vesting, consisting of a graduated proportion of the employer's contributions, which begins after a substantial period of service.\(^\text{13}\)

As mentioned earlier, vesting has the effect of offsetting the "gains" to the employer resulting from employee turnover. Without vesting, the amount contributed on behalf of a severed employee acts to reduce the amount to be contributed for the remaining employees. Or, putting it another way, the absence of a vesting provision allows the employer to discount in advance for anticipated turnover.

Unions have expressed some demands for vesting.

\(^{13}\) O'Neill, Hugh. Modern Pension Plans. op.cit. p. 313.
provisions, but, being aware of the effect on cost, have not pressed their demands too strongly. Assuming that they consider the minimum retirement benefit to be more important, it appears that vesting demands will not be pressed too strongly until they are satisfied with the retirement benefit. Nevertheless, the complete lack of a vesting provision can have the effect of making it inadvisable for the dissatisfied, ineffective worker to sever employment voluntarily, since he may not be able to forfeit his pension rights.

Vesting provisions in a pension plan must be drafted with extreme care. Where the vested interest is to be received in the form of cash, for example, the employer may be creating an incentive for the employee to leave, partly for the purpose of receiving his vested interest. A solution is to provide that the vested interest be in the form of a paid-up annuity, to begin at retirement date. Also, the conditions under which the employee is to receive his vested interest must be carefully spelled out. There are a great many reasons why an employee may be fired, some of which would certainly not entitle him to a vested interest in his pension rights.

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NORMAL RETIREMENT AGE

By far the majority of plans call for a normal retirement age of 65. This is particularly true of the plans which provide that Social Security benefits be included in the pension formula. Even firms without such a provision have chosen 65 primarily as a matter of social custom. It is not uncommon to find a retirement age for women at age 60.

The effect of the normal retirement age on cost of the plan is shown by an illustration, based on a common pension formula.\(^\text{15}\)

<table>
<thead>
<tr>
<th>Retirement Age</th>
<th>Cost Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>145</td>
</tr>
<tr>
<td>65</td>
<td>100</td>
</tr>
<tr>
<td>70</td>
<td>65</td>
</tr>
</tbody>
</table>

With this in mind, along with the fact that many persons are able and eager to work and perform valuable service after 65, employers may well give considerable thought to the possibility of establishing a retirement age higher than 65.

Closely allied to the normal retirement age provision is the provision for compulsory retirement. During World War II, when there was a scarce labor supply, employ-

ers relaxed their compulsory retirement provisions. There is a tendency even yet to continue this practice, and it will probably continue until labor shortages are eased.

The question of whether or not compulsory retirement in any event is desirable can be the subject of endless debate. From the standpoint of administration of the plan, compulsory retirement is probably desirable. It keeps the working force young and it enhances promotion of younger employees. Failure to have compulsory retirement might nullify many of the reasons for which the plan was originally adopted.

From the standpoint of sound economics, and from the social view, compulsory retirement is probably undesirable, and savors of acting by rule rather than by reason. To arbitrarily discard each person from the working force when he becomes 65, without regard to the needs of the firm, the wishes and ability of the employee, and without, perhaps, a pension benefit adequate to support the employee, appears to be poor policy.

CONTRIBUTORY VS. NON-CONTRIBUTORY PLANS

In the early days of the informal plans (see Chapter I), most of the pension "plans" were non-contributory. With the coming of formal plans, particularly the insured group annuities in the 1920's, the emphasis shifted
The primary purpose in this shift was one of reduction of employer cost (per dollar of benefit), but once it was generally accepted, contributory plans became a matter of principle, and were considered to have objectives in addition to the mere reduction in employer's cost. Without doubt, there are advantages in having the employee feel that he is providing, in part at least, for his own retirement. These advantages are primarily of a social or psychological nature, and are not of primary interest to the accountant.

The pension battle of 1949 was fought partly on the basis of contributory versus non-contributory plans. The Steel Industry Board recommended non-contributory pensions\(^{17}\), and the employers lost their battle for contributory pensions. Since that time, most union demands have been for non-contributory plans, and it appears that these demands will continue.

In addition to the non-economic factors mentioned above, there can be no doubt as to the desirability of contributory pensions from the standpoint of cost reduction. It must be remembered, however, that the total


\(^{17}\) Steel Industry Board appointed by the President. "Report to the President of the United States on the Labor Dispute in the Basic Steel Industry" submitted July 15, 1949.
amount contributed by employees is not added to the pension benefit, or deducted from the employer's cost. Employee contributions are returnable to the employee upon severance of employment, usually with interest. In other words, while all employee contributions are returned to the employee, a substantial portion will be returned as a severance benefit, and the cost reduction is limited only to those employees who retire.

Finally, if the choice between the two types of plans involves the alternative of giving the employee a raise or contributing a like amount to a pension plan, there is tax advantage in making the contribution directly to the plan, rather than giving the employee a raise. The raise, even though it is withheld as the employee's contribution, is taxable currently to the employee.

It appears that the choice between contributory and non-contributory plans is primarily one to be decided on social grounds, and the author is not able to detect any general agreement as to which is the most desirable.

PENSION CONTRACTS FOR A LIMITED PERIOD

Most of the pension plans established as a result of bargaining with unions are limited to the term of the labor contract. Presumably the pension agreement will come up again for negotiation along with the other elements of the labor contract. In view of the Treasury's
requirement that a plan must be "permanent" in order to qualify under Sec. 165(a) of the Internal Revenue Code, the question arises as to the tax status of those plans which are expressly stated to be limited to the term of the labor contract. Further, almost all of the negotiated plans apply only to those employees who will be eligible to retire at some time during the contract period. No provision is made for those employees who will not be eligible to retire until a later date.

The Commissioner has ruled that the plan will be considered permanent, even though the employer is not required to continue the pension contract beyond the term of the labor contract.\textsuperscript{18} It is still subject to the discriminatory provision, although a pension contract negotiated with the union will usually qualify on that basis.

Whether or not deductions may be claimed for all employees, or merely employees who will be eligible to retire during the contract period, seems to be based primarily on the intent of the contract to continue or to terminate at the end of the contract period.\textsuperscript{19} If there is no evidence of intent to discontinue, and if the employer makes it known to employees that his intent is

\textsuperscript{18} P.S. No. 64.  
\textsuperscript{19} P.S. No. 67.
to have a permanent plan, and if the plan provides for liquidation of the fund so that none of the funds will be used for purposes other than benefits accrued under the plan, then the plan will be deemed to be permanent with respect to all employees, and deductible contributions can be made with respect to all employees.

Regardless of the wording of the contract (which invariably reserves to the employer the right to discontinue the plan at any indefinite time in the future), the assumption is that the plan is continuing. Particularly in cases where the pension contract is a result of bargaining, it seems unlikely that the employer could discontinue the plan, even though he might think it desirable to do so.

In any event, for actuarial or accounting purposes, the only valid assumption is that the pension plan will continue indefinitely.

SUMMARY

This chapter has not been an exhaustive study of the problems involved in designing the provisions of the pension plan. Emphasis has been placed on some of the more important provisions in which the company accountant would have some interest, and over which he might be able to exercise some authority or influence from the standpoint of control of costs.
CHAPTER VI

AN ALTERNATIVE APPROACH TO THE PENSION PROBLEM

Up to this point, the only type of pension contract under consideration has been the type in which the employer has agreed to pay pension benefits. These benefits could be a flat amount to each employee, or determined by a formula related to compensation, years of service, or both. Once the benefit has been agreed upon, it is the obligation of the employer to pay that benefit to all qualified employees, regardless of the method he chooses to finance it.

There is an alternative approach to pension planning which reverses this process. This approach results in the employer agreeing to make periodic contributions to a trust or insurance company, rather than to pay a retirement benefit to eligible employees. In this type of pension plan, the employer's obligation ceases with the contribution. It then becomes the obligation of the trust or the insurance company to pay the benefits, either in accordance with some predetermined formula, or whatever benefits the employer's contributions will buy.

The traditional type of pension plan has been the first type. The alternative approach is of fairly recent origin, but it includes a surprisingly large number of plans. This type will include all those plans in which
the obligation of the employer is to contribute a stated percentage of the payroll, so many cents per man-hour, or a given percentage of profits, if his obligation is discharged by making the contribution.

For the remainder of this dissertation, the first type of pension plan will be referred to as "fixed-benefit" type plans. The alternative type will be called "fixed-contribution" plans. The terms are not entirely satisfactory, but the author has found references to them in other writings, and they will be used for lack of more descriptive titles.

Only for accounting purposes can the fixed-contribution plans be classified into one group. From the standpoint of labor relations, financial, personnel, and economic aspects there are a great many differences which do not concern us here. To the accountant they are the same, in that there is no problem of cost determination. The "cost" of the profit-sharing plan, or any of the fixed-contribution plans, would seem to be whatever contribution is made. The sum accumulated in the fund is used to pay whatever benefits it will buy, calculated on an actuarial basis, or by some predetermined formula.

One point is so obvious that it scarcely requires mention; both the contributions and benefits can not be fixed. In the final analysis, one determines the other, and one or the other must be flexible. And yet, many
companies have so worded their pension plans that careful analysis is required to determine which variable, the contributions or the benefits, is the independent variable, and which is the dependent variable. For example, the following excerpts are taken from the plan of a small manufacturing concern interviewed by the writer:

"Article IV: Normal Retirement Benefits:

a) The monthly retirement benefit of an employee eligible for normal retirement benefit who has applied therefor and has 25 years or more of credited service shall be $45.00, however, the monthly pension payable to any such pensioner who retires before June 18, 1955 shall not be less than $100.00 including such pensioner's primary Social Security Benefits."

"Article VIII Payments to the Trust Fund

1. The Company shall cause to be transferred to the trustee..............applicable to the year ending July 23, 1951, such moneys being equal in amount to five cents for every hour worked during the aforesaid period.--------

2. ----for the two years ending July 23, 1953, an amount equal to the sum of six cents for every hour worked..........; and on and after July 24, 1953 amounts equal to the sum of seven cents for every hour worked for the Company by employees covered by this agreement.------------

3. Deposit by the Company with the Trustee of payments computed in accordance with this Article shall be in complete discharge of the Company's financial obligation under this plan.

5. If at any time an actuary appointed by the Board determines that the payments required under Sections 1 and 2 of this article are in excess of the amount required to fund the future service costs as earned, and to amortize the lump sum past service cost on the basis of a level method of funding by July, 1970, he shall advise the Board of the estimated maximum amount by which the benefits provided under the Plan could be increased and still permit the revised future service cost to be funded as earned and revised lump sum past service to be
amortized on the basis of a level method of funding by July, 1970 by the payments required under sections 1 and 2 above, and thereupon the Board shall have the authority to so increase the benefits. If at any time, an actuary appointed by the Board determines that the payments required under sections 1 and 2 of this Article are not sufficient to fund the future service costs as earned and meet the interest requirements on the unfunded past service liability, he shall advise the Board of the estimated amount by which the benefit provided under the Plan should be decreased so as to permit the revised future service cost to be funded as earned and the revised lump sum past service cost to be amortized on the basis of a level method of funding by July, 1970, by the payment required under Sections 1 and 2 above, and thereupon the Board shall have authority to so decrease the benefits.

Here, quite obviously, the independent variable is the contribution, the dependent variable is the benefit. It would appear that the cost of this plan, and the annual amount to be recorded as pension expense, is the amount contributed to the trust. The retirement benefit is $45 per month, in most cases, and is payable to the retiring employees as long as the fund lasts. But if the fund is inadequate, and such might result from any number of reasons, the employer has the right to scale down the benefits.

A parenthetical note is required concerning pension plans insured by group annuities or individual policies. In these plans, the risk of mortality and investment experience is borne by the insurance company. It is therefore possible for the employer to "fix" both the contributions and the benefits, since any variation in actual experience from predicted experience is absorbed by the insurance company. From the point of view of the account-
tant, these plans are fixed contribution plans, since the employer's liability is discharged by payment of the premium.

From the employer's standpoint, the type of plan quoted above has a great many attractive features. If the company should suffer a series of serious setbacks, hours worked will be cut down, and pension contributions reduced accordingly. In case of a general economic depression, accompanied perhaps by drops in prices of securities in which the pension trust assets are invested, the company has no legal obligation to make additional contributions to cover those losses, presumably in a period when it is least able to make up such losses. The company, in any case, is not burdened with a heavy inflexible commitment in times of depression. Further, the demands on the pension funds are likely to be greatest at just these times. Conditions which contribute to oversupply of labor, declining prices, and reduced activity have the effect of increasing retirements.

For the same reasons, highly organized unions in the larger industries have not accepted these plans.¹ It may surprise the reader that the above plan was agreed upon between a steel fabricating company and the UAW-CIO.

¹UAW-CIO "Basic Minimum Standards for Supplementary Security Programs", shown as Appendix 5 in How to Plan Pensions. op. cit. p. 392.
 Needless to say, the executive interviewed by the writer looked upon the negotiations as a triumph for management. The company is a small one, however, and the union may well recognize the fact that the continued welfare of the employees is dependent upon the continued success of the company, and may recognize the necessity for restraint in the bargaining of pension provisions which might contribute to the eventual failure of the company. This is the writer's conjecture, however, and it does not appear that a similar attitude is exhibited by union representatives in the larger companies, the eventual failure of which is usually not given serious consideration.

A plan such as the one quoted above is not to be confused with the type of plan negotiated between the Chrysler Corporation and the UAW-CIO after the prolonged strike in 1950. The Chrysler plan is one in which the benefits are established as a result of the contract. One of the hotly contested issues was whether or not Chrysler would put into a fund an amount equivalent to ten cents per hour, such fund to be in partial control of the union.\(^2\) Here the question was not a matter of cost determination, but rather of how the plan was to be financed.

Another example of a fixed contribution plan is

the one negotiated between the United Mine Workers of America and the coal operators. In this plan it appears that the operators have no contractual obligation beyond that of contributing the agreed-upon royalty during the term of the union contract, stated in terms of cents per ton mined. The royalty rate began at five cents per ton and has been increased successively to thirty cents by 1950.\(^3\) Pensions were payable at the rate of $100 per month to miners sixty years of age who had worked for twenty years in the industry. Pension payments were temporarily suspended in September, 1949, because of lack of funds. Here is a case which illustrates the point that both contributions and benefits cannot be fixed.

The United Mine Workers fund also illustrates a more important and less obvious point. Regardless of the contract, it could be argued that the employer is not limiting his liability, as a practical matter. Where the fund runs short, the employer may be forced to increase the rate of contribution, as the mine operators were forced to do, rather than decrease the benefits, even though the contract expressly allows for the latter

alternative. The additional contributions may be bargained for, or the employer may be forced to contribute to maintain healthy employer-employee relations, and to maintain the general goodwill of the community. The suspension or reduction of a pension benefit is a serious matter, especially to retired employees or to workers who are close to retirement. The fixed contribution plan has a great number of advantages from the standpoint of the financial security of the firm, but only if the management is in a position to take advantage of the terms of the contract.

There is one point, touched on above, which stands out above all others. In the last analysis, the assurance which employees have that they will receive their pension depends upon the continued financial ability of the company to make contributions. Even the fixed-benefit plans contain a provision that the company may at any time cease making contributions. In most of these cases the liability of the company extends only to those employees who already have acquired a vested interest, or who have retired prior to the discontinuance of the plan. Of course, here again the same problems of loss of employee goodwill would arise regardless of the type of plan.

Perhaps it would be advisable at this point to summarize the differences and similarities of the two approaches to the pension problem. In the fixed benefit
plans, we have an obligation on the part of the company to pay a stated pension benefit. Technically the employee looks to the company to pay the pension, regardless of an intervening pension trust. If the trust assets are insufficient, those employees who have retired or who have vested interests may look to the assets of the company for payment. In the fixed contribution plans, the obligation of the company is not to pay a stated benefit, but rather to make a stated contribution to a trust (or insurance company). The employees take a position in the nature of those of third party beneficiaries. If the trust assets are insufficient, the benefits, technically, are scaled down to a point where the trust can afford to pay the revised benefits. This is the legalistic, or technical point of view, with emphasis on the differences between the two types.

However, there are practical, though somewhat tentative, similarities between the two plans. In the fixed benefit type, most plans provide that the company may discontinue the plan. Very likely the only circumstances under which this would take place would be those where severe economic setbacks would place the company in financial danger if contributions were continued. Also the company would have to prove "business necessity" in order to avoid retroactive disallowance of previous contributions (see p. 68). In the fixed contribution
type, even though the company has no legal obligation where the trust assets run short, it appears that outside pressure may force them to increase their contributions if they are financially able to do so, rather than scale down the benefits or discontinue the plan. Although this type of plan will qualify under Section 165 (a) of the Internal Revenue Code, the same dangers exist in cases of discontinuance or reduction in benefits that exist in the fixed benefit plans.

The question to be answered, for accounting purposes, is this: Are the legal differences between the two approaches to the pension problem sufficient to conclude that the cost of a fixed benefit plan is the cost of the benefit, and in fixed contribution plan, that the cost is the amount contributed? Or are the practical similarities so strong that the cost in both cases is the cost of providing the stated benefit?

The writer is inclined to answer in the affirmative to the first question, and therefore negative in the second. It would certainly appear that the management, in negotiating a contract for a fixed contribution, intends to avoid a commitment for a fixed benefit and that it has every intention of staying with the contract. Otherwise the contract would not have been so written. Any subsequent revision of the contribution, as occurred in the case of the United Mineworkers Welfare Fund, is at
least a matter to be determined in subsequent negotiations involving contract revisions at that time. Furthermore, it must be recognized that in the case of an excessive pension fund, the management (at least in the above-quoted contract) is obligated to increase the benefits. In the case of a fixed benefit plan, an excessive fund will presumably reduce future contributions.

If we have concluded that the employer has successfully fulfilled his pension obligations under the contract by making contributions based on hours worked, units produced, or, in the broadest sense, even a percentage of profits, the problem arises as to whether these plans can be thought of as a possible universal solution to the industrial pension problem.

The arguments in the negative come first. It could be said that the pension drive is a drive for security in old age, and that the only answer to security is a guaranteed benefit. A variable benefit, the amount of which the employee cannot predict, is apt to be discounted by the employee to a point of worthlessness. A pension plan designed on this basis would most likely defeat its own purpose, and the contemplated advantages would be lost. It could be said that a pension plan can not accomplish the dual purpose of a wage increase and security in old age. It must be one or the other.
Many pension consultants take this view. In an interview with the writer, one consultant expressed the following: either a firm has a pension problem or it hasn't. If it has, the only solution is a fully-funded plan, with benefits related to both service and earnings, but with a substantial minimum pension to all eligible employees. It is perhaps regrettable that this type of plan involves a fixed dollar commitment by the management, but it is, nevertheless, a requirement of sound pension planning.

The resistance of most labor unions to plans involving indeterminable benefits may of itself be an insurmountable obstacle to widespread adoption of the fixed-contribution plan as a pension device.

In the writer's opinion, the arguments in favor of this type of plan are stronger than those against. The most telling point that can be made is that security cannot be guaranteed in any event. From the standpoint of the economy as a whole, the only way we can provide for retired persons is to increase the productivity of the working force to the point where the working population can produce more than they consume. From the standpoint of the individual firm, the best "guarantee" a company can provide is contingent upon continued profitable operations of the firm. If our economy continues to expand, if our productivity continues to rise, if firms
continue to operate profitably, we will be able to pro-
vide for retired persons. If depressions occur, if sources
of enterprise capital dry up, if employment and productiv-
ity are reduced, we will have failed to provide for our
aged. This fact cannot be changed by the wording of pen-
sion contracts. Our first responsibility is to promote
an expanding, healthy economy. If burdensome pension con-
tracts have the effect of detracting from that progress,
it is better to avoid them.

Therefore, it is this writer's opinion that we can
provide pension benefits just as well with fixed contri-
bution plans, as we can with fixed-benefit plans. The
only serious deterrent to the widespread use of the former
is the organized opposition that has developed from the
highly centralized labor unions. If the union leaders
could be convinced of the fundamental fallacies of "guaran-
teed" pension demands, perhaps much progress could be made
in this direction.

It should be noted, perhaps, that profit-sharing
plans have operated successfully in a significant number
of cases, with a retirement program as one of the major
objectives. One of the most famous of these is the profit-
sharing plan of Sears, Roebuck, & Company. This plan,
installed in 1916, had pensions as its primary purpose.
The Sears executives now are convinced that company opera-
tions are more profitable as a result of the profit-sharing
program. The success of the company, in turn, results in success of the profit-sharing program. The Sears plan has the added feature that a major portion of the trust assets are invested in Sears stock. The trust is now the largest individual stockholder of the company owning more than 20% of the outstanding stock. This is an outstanding, although admittedly an exceptional, example of the close relationship between the success of the firm and the success of its retirement program.  

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CHAPTER VII
COSTS OF ADMINISTRATION

The interest of the company accountant in the administration of a pension plan goes far deeper than merely the cost of that activity. While the function of administering the pension plan varies widely from one plan to another, and from one firm to another, a large portion of the administration invariably falls on the accounting department.

When pensions first came into a position of national prominence in 1949, one of the objections to industrial pensions was an extremely high cost of administration. Since that time, little has been said about the matter as far as cost is concerned, and the author was able to obtain little information of any value from the companies visited. No cost studies had been made, nor were any contemplated. In almost every case, the administration of the pension plan was merely added to the duties of the present organization. This would make it very difficult to determine what part of the total administrative cost is attributable to the pension plan, or rather, the ad-

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dition to total administrative cost resulting from the
pension plan adoption. Even in the larger companies, the
function of pension plan administration is grouped with
other fringe items such as group insurance, health and wel­
fare, recreation, etc., to the point where pension adminis­
tration cost could not be isolated.

When they were questioned specifically about the
cost of pension administration, most executives expressed
the view that the continuing administrative problem was
not as difficult or as costly as they had anticipated. It
is recognized, however, that this conclusion is of little
value.

No attempt was made by the author to conduct any
studies on the cost of administration. As indicated
above, a definite conclusion could probably not be reached
even in an individual case. Secondly, there is some
question as to whether the amounts involved are large
enough to warrant investigation. Finally, since there
is such a wide variation among plans, and among the ad­
ministrative organizations of the firms, that a wide
investigation would have to be made in order to reach a
general conclusion as to the cost of administering pen­
sion plans. The remainder of this chapter will there­
fore consist of a general discussion of the administra­
tive problems in a qualitative sense, with particular
emphasis on the accounting point of view.
INITIAL ASSEMBLY OF EMPLOYEE INFORMATION

Regardless of the type of plan adopted, one of the largest elements of administrative cost is the initial cost involved in planning and installing the retirement program. Personnel information regarding age, length of continuous service, compensation since the date of employment, sex, and pay status must be compiled in the planning stage. As pointed out in Chapter III, this information will be needed in order that the planning group make intelligent decisions as to the benefit the company can afford to pay. This information must be supplied the actuary for his cost calculations.\(^2\) In choosing among the various benefit formulas, it may be necessary to assemble data on different bases for different cost calculation formulas.

This work of the assembling of data in the planning phase of pensions serves also to support actual participation records when a plan has finally been adopted. It is of permanent value, therefore, even though initially it may have been for the purpose of actuarial estimates. Since there is much of this information which is of a relatively permanent nature, and since the same informa-

tion is to be used in different connections, profitable use can be made of punch-card accounting equipment, particularly in large companies.3

The cost of this initial assembly function will depend, of course, on the availability and accuracy of the employee records. Since this information must be assembled for every covered employee, the records must go back to the hiring date of the longest-service employee. In many cases, some of the information, particularly regarding salaries, is not available. In other cases, the difficulty in obtaining the necessary data may be great enough to justify the calculation of past service benefit on the basis of an assumed compensation.

ADMINISTRATIVE CONSIDERATIONS IN PLANNING

This brings us to another phase in the planning of pensions in which the accountant is most interested. There are a great many technical details in the planning of pensions which must be resolved as the process continues. These details may appear insignificant when compared to the significance of the entire plan, but from the administrative viewpoint, it is particularly important that the accountant be aware of the administrative

3 Ibid., p. 730.
problems which are likely to arise from such details.

There are examples without number which could be cited to illustrate this point, but only a few will be given. In defining "compensation" for purposes of determining the pension benefit, for instance, the decision to include or exclude overtime, incentive earnings, or shift differentials must be weighed against the expense of administering the provision.

Many of the steel plans provide for a pension formula calculated on the basis of the average earnings in the last 120 months preceding the month in which the employee retires. Unless the payroll records dating back to 1942 are kept on a monthly basis, this calculation may be very difficult. An easier provision to administer is to provide for the pension on the basis of compensation during the ten calendar years preceding the month in which the employee retires.

Although it is not necessary, it is advantageous to establish an anniversary date of the plan, at which time all retirements, new entrants, change in age of all covered employees is deemed to occur. This eliminates all actuarial adjustments due to fractions of a year. Further,

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Lipton, Maurice F. "Actuarial And Accounting Aspects of Pension Plans", an address before the Pittsburgh Chapter, National Association of Cost Accountants, April 21, 1950.
this anniversary date should differ from the end of the fiscal year of the company to avoid the pyramiding of year-end work.

The important point here is that the final provisions of the plan must be examined in minute detail, in the light of the administrative and bookkeeping considerations. Small changes, perhaps perfectly acceptable to all interested parties, may save many dollars of administrative cost. While much of this type of work is the function of the actuary and the pension expert, the company accountant is in a position to recommend changes which will allow the pension plan to fit most easily into the existing administrative and accounting system.

INSURED PLANS VS. TRUSTEED PLANS

One of the important considerations which the proponents of insured pension plans emphasize is that the cost of administration of an insured pension plan is less than that of a trusteed plan. The large insurance companies have already established the machinery for handling large pension plans in a most efficient manner, and they have had the benefit of many years of experience in the field. This experience is especially important in the planning stage, and many of the pitfalls such as those suggested above are eliminated automatically by the acceptance of one of the funding arrangements offered by insurance companies. The
advocates of trusteed plans, in most cases, are not willing to admit that insured plans cost less to administer, and the problem is not one on which there are many statistics available.

In insured group annuity plans, there is a "loading" charge which is usually established at eight percent of the premium paid, which is designed to cover costs of administration. In insured deposit administration plans (see Chapter VIII), the charge is between four percent and eight percent in addition to charges for state premium tax, if any. This charge compares roughly to the fees for the services of the independent actuary, the pension consultant, and the trustee's fee incident to the trusteed plan. Generally, the record-keeping problems under both types of plans are about the same. The insurance company also performs important services in the administration and investment of funds, guaranteeing a rate of return. The advantages to be gained from this, however, cannot be discussed wholly under the heading of administration, however, since it is directly connected with the broader problems of the earning rates and the shifting of risk, to be discussed in greater detail in Chapter VIII.

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The choice between an insured and a trusteed plan usually will rest on more important considerations than the details of administration. Administration is a consideration however, and other things being equal, there is probably an advantage in the insured plan. Other things, however are seldom equal.

CONTRIBUTORY VS. NON-CONTRIBUTORY PLANS

The choice between a contributory pension plan and one which is non-contributory is usually determined on the basis of such factors as morale, the social problem, and effect on cost of benefits. However, the cost of administration of a contributory plan is significantly higher than that of a non-contributory plan of the same nature. The contributory plan requires:

1) The mechanics of making payroll deductions.

2) The keeping of continuous records of contributions for each employee, where, in some types of non-contributory plans, such individual employee records are not required. (See p. 56)

3) Administration of funds to facilitate the return of contributions, usually with interest, to the employees upon severance before retirement. This greatly increases the number of cash transactions in the fund, and results also in loss of interest earnings due to the high degree of liquidity required. In the case of trusteed
plans, this cost is borne by the employer.

Here, as in the choice between insured and trusted plans, the primary considerations are perhaps other than those of administrative cost, but it is important, and one which seems to be largely ignored by most writers on the subject.

DISABILITY BENEFITS

The problem of disability benefits is outside the scope of this paper, but since so many trusted plans include such benefits in the pension agreement, a comment on the administration of a disability provision is in order. Most plans call for the payment of a benefit in cases of "permanent" disability of the covered employee, resulting from any cause other than specific exceptions, such as drunkenness, use of narcotics, self-inflicted injury, and others. Each case involves physical examination, and in cases of dispute, a series of examinations. Many cases require re-examination of what constitutes "permanent" disability, and in cases of negotiated plans, the provision is the subject of endless controversy.

It appears to the writer that the company might re-examine the possibility of insuring the disability provision of the plan, even though the retirement portion might be handled as a self-administered trust. This would involve a separate disability plan. The insurance premiums
are high, but several persons who have had experience in administering disability provisions, have arrived at the conclusion that the cost of self-administered disability provisions is even higher. Most insurance companies will not include disability provisions in an insured pension contract.

THE RETIREMENT COMMITTEE

Regardless of the care and forethought with which a retirement plan may be written, the establishment of a continuing retirement committee is considered to be essential in most cases.

There are always provisions in the plan which will require interpretation in the light of the surrounding circumstances. Even in company-sponsored plans, the provision for a retirement committee is the rule. In negotiated plans, the provision is universal. In the latter case, the committee is usually composed of representatives of both union and management. The typical committee of this type will have an equal number representing both labor and management, with provision for an independent arbiter who will vote only in case of dispute.

According to Hillman, the responsibilities of the

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retirement committee relate to the various types of problems:

1) Requests for changes in service dates, due to errors or inadequate data in personnel records of prior years.

2) Evidence supporting requests for changes in birth dates.

3) Problems under a trusteed plan regarding payments to be made to certain annuitants, such as the mentally incompetent.

4) Modifications of retirement age.

5) Routine matters, such as approval of pension payments, severance benefits, discontinuance of annuity payments on proof of death, etc.

Hillman points out that the persons chosen to serve on the retirement committee should be those who have had wide background in the company's history, and who have broad experience in dealing with employee problems. Such persons will promote consistency in the administration of company policy, and will be most inclined to deal with each problem in a manner which will promote healthy employer-employee relations.

COMMUNICATIONS WITH EMPLOYEES

Many of the matters discussed in this chapter are of interest to the accountant only in the sense that they
are costly, and that they are incurred in connection with the pension program. One of these, included broadly under the head of administration, is the problem of employee relations with respect to the pension.

One of the main purposes of the pension plan is the promotion of better employee relations. For the pension plan to accomplish this purpose, it is essential that the plan be presented to employees in a manner that will make it attractive and understood.

This is not an easy matter. Pension plan provisions are complicated and dry. The technical details generally are beyond the comprehension of the average hourly worker. No attempt will be made here to outline the various means which companies have used in an attempt to gain a wider employee understanding of the significance of the pension program, both to the employee and the company. Efforts have ranged all the way from elaborate brochures to comic books.

Further, the problem of employee communication is a continuing one. Pension plans, once installed, are easily forgotten by the employee, particularly in cases of non-contributory plans. The management must constantly keep the employee aware of the program and of how his continued service affects his pension rights. These considerations have been badly neglected by many companies, and the
consequences of such neglect can be the defeat of the objectives of the plan.
Of the phases of pension planning, that of financing the pension plan has been given perhaps most emphasis in recent years. Most business executives, when asked to consider the problem of various "types" of pension plans, seem automatically to think in terms of the various types of financing, rather than in terms of benefit formulas, or contractual arrangements, or some other classification.

Perhaps the most important reason for this point of view is the income tax regulations. To get a tax deduction for pension expense, the employer must make a contribution to a qualified trust or insurance company, even though the employer is on the accrual basis. It is the contribution which is subject to the tax provisions with regard to allowable actuarial assumptions and funding methods. It is not difficult to understand why tax-conscious employers become preoccupied with pension financing to the exclusion of the other matters which are at least equally important.

For purposes of this paper, the matter of financing the pension plan will not occupy such an important position. The overemphasis on financing has been one of the contributing factors which has led to the confusion of pension cost with the annual contribution, a line of
reasoning which, except for the fixed-contribution plans discussed in Chapter VI, is clearly inconsistent with accrual accounting.

Perhaps the most useful view of the pension financing problem is that it is merely one element in the overall problem of financing the business enterprise. Not only must the financing methods fit the provisions of the pension plan, but also it must be designed in view of the other financing problems of the business. With this point of view, we go beyond the area of the accountants' responsibility, and the choice of the financing method may well rest on considerations which are not usually considered to be accounting matters.

From the accounting viewpoint, perhaps the most important consideration in the choice of a method of financing is the effect on the cost of the plan. All else being equal, the pension planners should choose the least costly financing method which is consistent with the basic objectives of the plan. The principal effect the financing method has upon cost is through the amount of interest earned on the accumulated funds.

The choice of the financing method also has an effect on cost of administration, as indicated in Chapter VII. This is perhaps one of the lesser important factors in the choice of a financing method.
In addition to the primary consideration of cost, the method of financing is important to the accountant for two other reasons. First is the matter of the deduction for Federal income tax purposes, and second is the closely related problem of cash budgeting.

The tax laws allow considerable latitude in determining the deductible amount, particularly for firms with large past service credits. As a minimum, the deductible amount, if funded, is the current service plus interest on the unfunded past service, for the first year of the plan. In any later year, the minimum amount is that required to keep the unfunded past service cost from increasing after the date of adoption. If the amount contributed is so small as to allow the unfunded past service liability to exceed the past service liability as of the date of adoption, partial suspension will be deemed to have occurred, and the plan must be submitted to the Commissioner for a redetermination of qualification under Sec. 165(a).

As a maximum amount, the tax laws allow as a deduction the current service plus 10 per cent of the past service cost. Possible exceptions to this general rule will be discussed below, as they relate to particular plans.

\[1\text{P.S. No. 57, August 5, 1946.}\]
In the usual case, therefore, the tax law allows considerable flexibility for qualified plans, and leaves room for administrative decisions in the areas of tax planning and cash budgeting. It is particularly important that the management be aware of this flexibility, and that the plan be designed in such a way that these advantages can be realized.

For these reasons the financing of pension plans will be dealt with in this paper as merely one element in the planning process. The emphasis will be placed on the effect of the financing method on cost control and on cost reduction. This point must be kept in mind by the reader, in order to avoid a one-sided impression of the financing problem. For example, this approach will result in placing most insured plans in an unfavorable light as compared to trusteed plans. Most insured plans are more costly per dollar of benefit than trusteed plans, and for that reason the latter might be favored by the accountant. The choice between an insured and a trusteed plan must rest not only on immediate cost considerations, however. It is necessary that the employer evaluate the risk inherent in the trusteed plan, and determine how the degree of risk will vary between various types of trust agreements and various sets of conditions within the firm. He must evaluate the relative merits and risks of the various alternatives in investment policies.
This chapter deals with insured plans, Chapter IX will deal with trusteed plans, and Chapter X with special funding methods. Both the insured plans and trusteed plans are assumed to be qualified for tax deduction under Section 165(a) of the Internal Revenue Code, except as otherwise indicated.

GROUP ANNUITIES

The group annuity contract is normally a direct contract between the employer and the insurance company. There is no intervening trustee as there is in many other types of insured plans. The principle of group annuities is similar to that of group insurance, in that one master contract is written to cover a large group. State laws usually require that the contract cover no less than 50 employees, although some have recently been amended to allow for as few as 25.² If the plan is contributory there is a requirement that at least 75 percent of the eligible employees join the plan.

Under the group annuity method, the employer purchases a unit of single premium deferred annuity each year which will cover the retirement payment "earned" by that employee for services rendered in that year.

The sum of the single premium annuities purchased for each employee over his covered employment will make up his retirement benefit beginning at retirement age.

Where the plan is contributory, either one of two methods may be used. Usually the amount of the employee contribution is a percentage of his wages. The employer may either make up the difference between the cost of the stated annuity benefit and the employee contribution, or he may contribute an amount directly proportional to the employee contribution. In the latter case, the sum of employer and employee contributions is used to purchase whatever annuity such sum will buy. This latter method is often called the "money-purchase" formula.

From the standpoint of cost, the difference between the two methods is of considerable significance. Where the employer makes up the difference between the cost of a stated benefit and the employee contribution, the cost (per dollar of benefit) to the employer will increase as the employee grows older. In the money-purchase formula, the employer's cost bears a fixed relationship to the payroll. The main disadvantage of the money-purchase formula is that only a small benefit may be purchased for older employees.

In group annuity financing, the funding of the past service cost is independent of the current service. It can be funded in a lump sum, according to a regular schedule, or as expediency dictates. The funds are used
to purchase units of annuity to provide retirement benefits based upon past service rendered by the employee. This means that past service contributions are made in behalf of the particular individuals, and that the entire past service benefit for each employee must be fully funded by the time that employee retires. In trusteed plans, contributions for past service are usually co-mingled with current service funds, and it is not ordinarily necessary that the benefit of a particular employee be fully funded at the retirement date of that employee, unless such a provision is written into the pension agreement.

Under group annuity plans, premium rates are usually guaranteed for five year periods. Any revisions in the rate will apply to all premium payments made subsequent to the revision. Whether or not the rate is revised will depend on the investment experience of the insurance company, and the actual mortality experience of the covered group. Any dividends from the contract are to be credited to the employer's portion of the contribution as they accrue, so that no substantial accumulation can result. This is a requirement for qualified plans.3

The "loading" of the premium by the insurance company for expenses and contingencies is normally eight

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3 Regulations lll, para. 29.23 (p)-9.
percent of the total cost of the plan. In return for this added cost, the insurance company will relieve the employer of some of the burden of administering the plan, will provide assistance in the installation, and will participate actively in preparing announcements of the plan to the employees. The reduction in administrative work resulting from the adoption of a group annuity plan is substantial as compared to a trusteed plan using the same benefit formula and funding basis, but an evaluation of this reduction is so dependent upon individual circumstances that generalization is difficult. For example, the insurance company keeps individual records of benefit credits for all employees, and presumably the employer would not have to do likewise. On the other hand, if the plan is contributory, the employer must keep a record of payroll deductions, and the additional step of recording individual employee credits would not be costly. Several firms interviewed by the writer maintained individual records of employee benefits for their own information, and as a check against the insurance company. In a few cases, the provisions of the plan required that individual records be maintained. It is the opinion of the writer that the choice between insured plans and trusteed plans rests on considerations other than merely the costs of administration. These considerations will be discussed
at the end of this chapter, since they apply to all insured plans, not solely to group annuities.

DEPOSIT ADMINISTRATION

Deposit administration is a type of group annuity plan. It was developed by insurance companies to meet the competition of self-administered trustee plans in which the employer has more control over his contributions, and has more flexibility in the plan provisions.

In the deposit administration type of pension plan, the premiums paid are not allocated to purchase benefits for any particular employee until his date of retirement. Instead, they are accumulated in an undivided fund at a rate of interest guaranteed in the contract. As each employee retires, there is withdrawn from the fund whatever amount is necessary to provide the benefit. The guaranteed interest rate is ordinarily 2 percent or 2 1/4 percent.

There are two main advantages of the deposit administration type of funding. First, it can be used for a wide variety of benefit formulas. For example, a benefit formula based on final average salary, which cannot be easily determined in advance, lends itself very well to deposit administration. Costs are ordinarily computed on an actuarial basis, but there is considerable flexibility in the choice of the actuarial assumptions to be
made. For example, withdrawals may be discounted in advance (this is not done in ordinary group annuities), allowance may be made for salary increases, and integration of the benefit with Social Security benefits is more easily accomplished. Since the funds are not allocated to particular employees at the time of contribution, adjustments caused by errors in estimates can be made easily.

Secondly, the timing of the contributions is flexible. Normally, the contract will stipulate the maximum and minimum amounts between which the employer contributions may vary without specific approval of the insurance company. It is possible for an employer to base his deposits on calculations that are, to some extent, independent of the contract provisions.\(^4\) It must be remembered, however, that the flexibility, while greater than insured group annuities, is usually less than that allowed under the common types of trusteed plans. Normally the insurance company would require that some contribution be made on the past service liability, although the amount might be small. Similarly the maximum to be contributed on the past service might be the maximum allowed as a deduction for tax purposes. In the case of trusteed plans, these

\(^4\)Pension and Profit Sharing Service, op. cit. para. 2158.
limitations usually do not exist.

In the deposit administration type of plan, the insurance company guarantees the principal amount of the contributions, plus interest at a guaranteed rate. The employer takes the risk of any gains or losses due to both mortality before retirement and turnover. No pension benefit is guaranteed any employee until the annuity is purchased for him at retirement date. At this point, the continued payment of the pension benefit is guaranteed by the insurance company, which therefore assumes the risks of mortality after retirement. Prior to retirement, therefore, the insurance company merely furnishes an investment service, guaranteeing principal and interest. Any interest earned by the fund in excess of the guaranteed minimum is added to the fund as dividends. The "loading" factor is usually less than the ordinary group annuities, varying between four percent and eight percent in the usual case.

For tax purposes, deposit administration plans follow the rules which apply generally to trustee plans. For this reason, the tax effect of deposit administration plans will be included in Chapter IX, which deals with trustee plans.

5Ibid., para. 9701.19 and para. 5121.
INDIVIDUAL ANNUITIES

Under an individual annuity type of insured plan, the employer purchases a separate contract in the name of each covered employee in an amount which will provide the retirement income. This type of insured plan is frequently used where the number of employees is too small to permit the use of group annuities, or where the risk of employer experience would be too great to be borne by the employer in a trustee plan. Many insurance companies will place a maximum limit of 100 to 200 employees to be covered under the plan, although the writer interviewed one employer whose 2000 employees were covered by individual policies.

Most insurance companies will not issue straight retirement annuities on an individual basis, but rather insist that the company also take out life insurance protection for an additional premium. Straight annuities might be issued to the uninsurables. To the extent that the payment to the insurance company is a payment for life insurance, it is taxable immediately to the employee, and must be reported by the employee as additional wages. Although life insurance and death benefits payable out of a pension trust, are considered to be outside the scope

of this paper, an exception must be made in the case of an individual policy plan, since the life insurance is so closely integrated with the plan.

Normally, a trust is used in connection with an individual policy plan, although the trustee usually serves no purpose except to hold title and possession of the policies. The use of the trustee avoids the possibility of the employer making use of the cash or loan values for corporate purposes, which probably would disqualify the plan under Section 165(a) of the Internal Revenue Code, and would defeat the fundamental purpose of the plan. Secondly, if title and possession of the policies were held by the employees, they could possibly convert the policies, thus defeating the plan.\(^7\)

Premiums are paid on the level annual basis, which means that the employer pays the same amount annually with respect to any individual, from the date of entry to the date of retirement, such amount being determined by the age and sex of the employee at the date of entry. Since the contracts are taken out on an individual basis, mortality and turnover are not discounted in advance.

In event of death of the employee, there is a fairly large death benefit, due to the insurance feature of the

\(^7\)Pension and Profit Sharing Service, op. cit., para. 2112.
plan. The amount of insurance is usually $1000 per $10 of monthly retirement income purchased for the employee. In some cases, the employee receives only a percentage of this death benefit, with the remainder being applied by the employer against future premiums for other employees.

If the employees' service is terminated for reasons other than death, the employer will receive the cash surrender value of the policy, in a non-contributory plan without a vesting provision. In a contributory plan without vesting, the employee is refunded his contributions, usually with interest, and the employer would receive only the excess of the cash surrender value over this amount, if any. Particularly in early years, the cash values of individual annuities tend to be rather low. Therefore there is considerable loss to the employer when the employee terminates his employment. In order to use an individual policy plan effectively, therefore, the employer must be reasonably certain of a low rate of turnover among his covered employees. This can be accomplished in many cases by establishing a long waiting period prior to entry into the plan, perhaps as long as five years. Some employers have excluded female employees from the plan, since they are generally considered to have a higher turnover than males.

It is also characteristic of individual policy
plans that a high rate of vesting is provided for. The provision is often for full vesting. Since the employer stands to recover relatively little in the event of termination of employment, this provision is a natural one, for the employee may then continue the policy after termination by paying premiums established at the time of the original contract. As alternatives, the employee may receive the cash surrender value at the time of termination, or he may take a paid-up annuity for whatever amount the cash surrender value will provide.

From the employer's standpoint, the individual policy type of plan is expensive. The premium rates are higher, and the administrative costs of the insurance company are higher. Of course it must be remembered that part of this cost is due to the insurance feature of the plan. It must also be remembered that the insurance company is taking the full mortality risk. This latter point is particularly important in the case of small companies, where the number of employees is so few that they cannot be expected to follow the law of averages of the mortality tables.

GROUP PERMANENT INSURANCE

The terms of a group permanent insurance and retirement program are very similar to the individual policy plan. The difference, as the title indicates, is that the
contract is issued on a group basis, and roughly the same requirements apply as in the case of group annuities. Group permanent insurance is a combination of group annuities and group life insurance. Premiums are on a level annual basis, as in the case of individual policies, and the ratio of the insurance to the monthly retirement income is usually $1000 to $10. There is a maximum of insurance that may be carried on any individual in the group, and in these cases the group permanent plan may have to be supplemented by individual policies on particular individuals, who are normally the high salaried executives. Medical examinations are not required in group permanent insurance, and a significant portion of the administrative cost is thereby eliminated.

Here, as in the individual policy plans, the losses in case of termination of employment are high, and this type of plan should probably be avoided where the covered group has a high withdrawal rate.8

MONEY PURCHASE PLANS

"Money-purchase" plans are those plans which do not guarantee any stated benefits, but in which the employer merely promises to pay a certain sum of money annually to

8 Boyce, Carroll W. How to Plan Pensions. op. cit. p. 141.
buy retirement income for the employees. This is the type of plan discussed at some length in Chapter VI. Strictly speaking, a money purchase plan is not a method of financing, but rather a type of pension formula which lends itself to particular financing methods.

Money-purchase plans may be financed with insurance companies, and for that reason are included in this chapter. The annual contribution, however, it may be computed, is made to the insurance company. In accordance with the terms of the plan, the insurance company may buy single premium deferred life annuities on a group basis. In this case, the retirement benefit of each employee is the total amount of annuity purchased for him up to his retirement date.

Or, deposit administration could also be used. In this case, the insurance company would guarantee the total of the contributions made, plus a minimum earning rate, and such sum would be used for the purchase of retirement income at retirement, in accordance with whatever benefit formula is provided for in the plan, to the extent of the total fund available.

Where an insurance company is used in connection with a money-purchase formula, the insurance company is in reality providing nothing more than an investment service, and the merits and demerits of this type of plan would have to be judged in terms of the alternative investment opportunities available to the employer at the time.
SUMMARY

Fundamentally, the choice between insured plans and trusteed plans centers around the disadvantages of the higher cost per dollar of benefit for the insured plans, and loss of some flexibility in planning and financing, weighed against the advantages to be gained from the assumption of risk of mortality and investment experience by the insurance company.

For very small firms, certainly it would appear that the risk factor is too great to be borne by the employer, and that perhaps the only way that an employee could be reasonably certain of protection of his pension rights would be under an insured plan of some sort. For larger firms the case is not so clear, but has been expressed very well by William G. Caples, Manager of Industrial Relations for the Inland Steel Company, in his testimony before the Steel Industry Board:

"......Inland maintains that a pension plan, if adopted, should be an insured pension plan insured with a large insurance company. We consider these pension promises to be of greatest importance to our employees and to us. If we make pension promises, we want to know that the promises will be fulfilled without question. Bear in mind the employees will look to us, not the union, to see that they are fulfilled and any failure will be laid at our door, not the unions. This means that they should be guaranteed by an institution financially stronger even than the strength of Inland. Some of the large insurance
companies are in a position of strength to provide those guarantees."

We will be in much better position to appraise the merits of this point of view after the discussion of the nature of trusteed plans, which appears in the following chapter.

—Ibid., p. 160.
Trusteed pension plans have been named "self-administered", "self-insured", and "uninsured" by various writers, and all three terms have been called misnomers in one sense or another. Trusteed plans vary so widely from one to another that a single term cannot be used as an all-inclusive title and still retain any significance. The term "trusteed" is not exactly accurate, because we have already seen that insured individual annuities normally involve the use of a trustee. Further, many employers have plans which are partly insured and partly trusteed, as in the case of the ordinary life pension trust.¹

Trusteed plans are those in which the contributions are made to a trust, to be invested by the trustee as prescribed in the trust agreement. The accumulations of the contributions plus interest are used to make pension payments called for by the pension plan. These payments may be made either directly by the trustee, or the funds may be used for the purchase of annuities from an insurance company under which payments are made to retired employees.

¹Pension and Profit Sharing Service, op. cit. para. 2153.
In this latter case, the situation is very similar to deposit administration plans outlined in the previous chapter. In South Penn Oil Co., the Tax Court held that in executing the deposit administration contract involved, the insurance company and the taxpayer created a fiduciary relationship. Whether or not the insurance company was authorized by its charter to act as trustee does not change the conclusion that it was acting as trustee.

In addition to the tax requirements for qualifying a pension plan, there are three additional requirements for qualification where the plan is administered through a trust. These requirements are:

1. It must be impossible under the trust instrument for any of the trust corpus or income at any time to be used other than for the exclusive benefit of the employees or their beneficiaries.

2. The contributions to the trust must be for the purpose of accumulating funds for distribution to employees or their beneficiaries according to a plan qualified under Section 165(a).

3. The trust must be valid and existing under controlling local law.3

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217TC27, July 17, 1951. Commissioner does not acquiesce.

3Pension and Profit Sharing Service, op. cit. para. 4021.
The first of these requirements, known as the "exclusive benefit" rule is of major importance. It means that it must be impossible for the employer to recover any amounts accumulated by the trust, except in the case of a balance arising from "erroneous actuarial calculations". These amounts may be recovered only in termination, after satisfaction of all fixed and contingent obligations.4

The trustee can be an individual, a group of individuals, a corporation, or a trust company. His responsibilities extend to the administration of the fund in accordance with the trust agreement. He does not guarantee benefits, as does an insurance company in the case of group or individual annuities.

The amount of the contribution, except in the case of money-purchase plans, is usually determined actuarially, and presumably the benefits are related to contributions by actuarial principles similar to those used by insurance companies. This work is ordinarily done by an independent actuary, and the employer can retain some control over the assumptions underlying the computation, to the extent allowed by the tax regulations.

Perhaps the greatest advantage given to trustee plans over insured plans is the advantage of flexibility

4Ibid., para. 4302.
in planning the provisions of the plan, and flexibility in administration. Within the rather broad provisions of the tax regulations, the management can design a pension plan to accomplish many purposes which are not strictly related to retirement, such as disability benefits, which are not usually available in insured plans.

In many instances, insured plans contain provisions and restrictions which would not otherwise be included if the plan were to be trusteeed. For these reasons, a fair comparison between insured and trusteeed plans cannot be made with respect to a particular pension plan, nor can it be made entirely in terms of cost.

While flexibility afforded by the trusteeed plan can perhaps be called the greatest advantage to the employer, it is that same flexibility that often introduces the disadvantage of risk. The avoidance of risk by the employer is the primary advantage of insured plans. Not only does the act of adopting a trusteeed plan introduce risk, but the incorporation of features into the plan which are not usually found in insured plans produces additional risks. It is the weighing of these risks against the advantages of flexibility and reduced cost which ultimately will decide the method of funding in any particular case. Therefore trusteeed plans will be discussed under headings which denote the principal points at which flexibility is an advantage, along with the risk
that accompanies this flexibility.

**BENEFIT FORMULAS**

First of all, there is considerable flexibility in trusteed plans in choosing a benefit formula which may not be available in insured plans. For example, insured plans generally do not provide for integration with Social Security in such a way that the future estimation of Social Security benefits is involved. Occasionally this is done in deposit administration contracts, but we have already seen that these contracts are more like trusteed plans than insured plans, since the insurance company does not guarantee benefits. There is considerable risk in the prediction of future Social Security benefits, and the result could easily be a large error in the calculation of pension costs. The risk of error in prediction must rest with the employer.

**CONTRIBUTIONS**

There is more flexibility in trusteed plans in determining the amount to be contributed each year. The only limits are those established by the tax regulations. On the other hand, in either group annuities or individual annuities, the insurance company will insist that the entire past service credit relating to the service of any individual be fully funded by the time that employee retires. Also,
insured plans usually provide a maximum amount that can be contributed each year. In trustee plans, there is no maximum limit, and the tax regulations will allow an excess contribution (i.e., one which exceeds that maximum allowable deduction in that year) to be carried forward and deducted in a year in which the allowable deduction exceeds the contribution.\(^5\)

A thorough treatment of the tax regulations for determining the maximum and minimum allowable deductions in any year is beyond the scope of this paper. Some of the requirements appear in other portions of the thesis as they affect the planning and accounting aspects of pensions. It is the intention here to describe only the broad outlines of the law, for the purpose of determining the degree of flexibility in funding available in qualified trustee plans.

First of all, the actuarial assumptions regarding mortality, interest, administrative expenses, turnover, retirement age, and changes in compensation must be acceptable to the Bureau. Whether or not a particular assumption is acceptable depends on the other assumptions, and the combined effect of all assumptions on the cost of the plan. For example, a cost calculation which anticipates

\(^5\)Internal Revenue Code, Section 23(P)(1)(A)(iv).
increases in compensation (thus increasing the cost) is usually acceptable if the assumed turnover is discounted (thus decreasing the cost). In any case, the assumptions must bear a reasonable relationship to the past experience of the employer.

Secondly, the law provides that where the assumptions result in an overestimation of costs, as revealed by the actual experience of the employer, this "actuarial surplus" is to be deducted from the amount otherwise allowable in the following year, to the extent of the past service cost. Similarly an underestimation of cost resulting from unfavorable experience may be added to the amount otherwise deductible in the following year. If the actuarial assumptions are conservatively chosen, the adjustment in the following year will normally result in a reduction of cost. In the case of insured plans, experience rating credits, cancellation credits, and dividends are to be treated in a like manner.

Finally, the amount of the deduction allowable in any year, on the basis of acceptable assumptions, is

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6 Pension and Profit Sharing Service, op. cit. para. 4021.
7 Ibid. para. 5141.
8 Ibid. para. 5172.
provided for in Section 23(p) of the Internal Revenue Code. This section consists of four clauses as follows:

Clause (i) provides that the employer may deduct a contribution equal to five percent of the compensation paid or accrued to covered employees. If the deduction is taken under this clause, no actuarial data need be submitted in the first year, but a certification by a qualified actuary (or insurance company) must be submitted the second year and each fifth year thereafter.

Clause (ii) provides that if the cost of the plan exceeds the five percent limitation above, the excess may be deducted to the extent necessary to pay the remaining unfunded cost of the past and current service credits, in terms of a level amount or level percentage of payroll over the remaining future service of each such employee. To obtain a deduction under this clause, the proposed method of funding must be approved by the Commissioner, if the method funds the past service cost more rapidly than that allowed in clause (iii). To determine whether this is true, the Commissioner has established five tests, any one of which will allow the deduction under the clause.9

Clause (iii) provides that, in lieu of amounts deducted under clauses (i) and (ii), contributions may

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9 Ibid., para. 9701 et. seq.
be deducted in an amount equal to the sum of normal cost, plus not more than ten percent of the supplementary cost. These terms refer to current service and past service, respectively, with minor modifications.

Clause (iv) provides for the carry-over of an excess contribution, referred to on page 142.

An examination of case material on the above subsection reveals only one matter of importance to this dissertation. It involves the situation in which some of the employees are less than ten years from the retirement date at the time of adoption of the plan. Under the level premium method of funding, the past service cost for these employees would be funded in less than ten years. Under clause (ii) above, it would appear that the excess past service cost is deductible, as long as the funding method is approved by the Commissioner, but in the case of Saalfeld Publishing Company, the Commissioner asserted that the amount of past service cost in excess of the ten percent limitation was not deductible. The Tax Court upheld the taxpayer, but the Commissioner did not acquiesce in the decision. The importance of this decision for accounting purposes will be discussed in

--Saalfeld Publishing Company, 11 TC 756, November 1, 1948. Commissioner does not acquiesce. Appeal dismissed by stipulation (CA-6, October 4, 1949).--
Chapter XII.

It is important to note that clause (iii) allows a deduction for past service of not more than ten percent in any year. Less than ten percent may be deducted, or none at all, if the employer so chooses. This provision gives the employer a degree of flexibility in contributions which, as noted above is not available in insured plans.

ADMINISTRATION

Flexibility in the administration of trusteed plans stems from the basic fact that the position of the trustee in a trusteed plan is normally less important than the position of the insurance company in an insured plan. Since the trustee does not guarantee the benefits, he has little responsibility for the administrative provisions of the plan beyond that of the responsibility for the funds placed in his hands. He may recommend and advise if called upon to do so, and his assistance may be invaluable, but the ultimate authority and responsibility for administrative details rests with the employer.

It has been noted above that the trustee need not be a corporate trustee. In two cases investigated by the writer, one a very small firm and the other a very large one, the trustees of the pension fund were officers and directors of the company. This arrangement allows not
be deducted in an amount equal to the sum of normal cost, plus not more than ten percent of the supplementary cost. These terms refer to current service and past service, respectively, with minor modifications.

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It is generally accepted that the use of a corporate trustee should minimize the risk of mismanagement and of administrative inefficiency which might appear if the trustee were an individual. But it should also be clear that where the pension benefits are guaranteed by a large insurance company, employer responsibility and risk is placed at a minimum.

MORTALITY

Since the benefits of group annuity and individual policy plans are guaranteed by the insurance company, the risks of mortality are borne by the insurance company. In trusted plans, these risks are borne by the employer. Mortality of active employees, and mortality of employees already retired actually constitute different problems, and will be discussed separately. The question of mortality before retirement is not basically whether to discount for this mortality in the pension calculations, as discussed in Chapter IV. It should be apparent that pension contributions which are made without discounting for mortality merely provide for the increased cost of unfavorable mortality experience. It does not eliminate the cost.

The main question relating to risk of mortality among active employees is whether the risk may safely be borne by the pension system itself or should be pooled
with that of other systems, i.e., placed with an insurer. The answer, according to Latimer, depends on the number of covered employees, the variability of risk in respect of the various individuals in the covered group, and other risks assumed or avoided in connection with the operation of the pension scheme.¹² For example, if the covered group is relatively large, and if the amount of the benefit to be received by the individuals varies within narrow limits, the mortality risk is small. On the other hand, if the number of covered employees is small, and if the retirement benefits vary widely among the individuals, the risk of mortality will be very large.

In any particular case, an employer will have many more persons on the active payroll than on the retired list. The ratio of pensioners to active workers is rising rapidly (see Chapter II), but in the typical case, it does not exceed ten percent at the present time. Therefore a company may be large enough to bear the mortality risk of active employees, but not of the pensioners. For this reason, many firms have trusteed plans where the trustee is directed to purchase an annuity for the employee at retirement, thus shifting the risk of mortality to the insurance company at that time. According to Latimer, a large majority of the pension plans which have less than

one hundred pensioners, and where maximum individual benefits are perhaps several times the minimum will find it beneficial, if not necessary, to insure the plan.\footnote{Ibid., p. 438.}

There are two additional factors which must be kept in mind in comparing trusteed with insured plans as far as shifting the risk of mortality is concerned. The first is that in insured group annuities, premium rates are subject to change every five years, and may be increased due to unfavorable mortality experience (increased longevity). The second is that mortality experience which is more favorable than that assumed will be reflected in dividends on group annuity policies. Both of these factors tend to reduce the differences between trusteed and insured plans. Perhaps it should also be mentioned that the investment experience of insurance companies has had so drastic an effect on premium rates and dividends in recent years that the effect of changes in mortality has been relatively insignificant. The investment aspect of the differences between insured and trusteed plans will be discussed below.

WITHDRAWALS

Insurance companies will not assume the risk of predicting the number of withdrawals from the work force of an employer. Group annuity rates are established to
cover all employees who will live to retirement. Any premiums paid with respect to employees who sever employment are credited to future premiums. In Chapter IV it was noted that in trusteed plans it is possible to anticipate the number of withdrawals, and contribute only with respect to the estimated number of employees who will work to retirement. This will reduce substantially the amount to be contributed in the early years in most cases, depending of course, on the rate of withdrawal predicted. Obviously, however, it introduces the risk of error in the prediction. The use of a withdrawal rate higher than that which is borne out by actual experience will result in an unfunded liability. On the other hand, the use of a conservative withdrawal rate in cases where the actual rate is known to be high will result in a much closer approximation of costs, and a more intelligent use of corporate funds.

INVESTMENTS AND EARNINGS

In the writer's opinion, the subject of investment of pension funds is perhaps the most important single subject in the entire area of pension financing. Any discussion of pensions which omits the investment problem must lose a portion of its significance, but it is of such scope that it must be omitted from this paper.
In this section we will be concerned with the relative merits of insured and trusteed plans, only insofar as the administration of the fund is concerned.

In insured plans, the investment problem is entirely out of the hands of the employer. The insurance company accepts the premium, takes all of the investment risks, and guarantees the principal and minimum earning rate. The only risk to the employer is the stability of the insurance company.

In both group annuity and deposit administration contracts, the guaranteed interest rate is subject to change, usually at five year intervals. The writer is familiar with one group annuity contract which was started in 1933, with premiums calculated on the basis of an interest rate of five percent per annum. Even by lowering the interest assumption by the maximum amount of one-half percent each five years, the premiums are now on a three and one-half percent basis, representing an excellent return to the employer and very likely a sizable loss to the insurance company. Interest rates quoted by most insurance companies today vary between two and two and one-half percent. Favorable investment experience by the insurance company is reflected in dividends, although dividends realized by employers in recent years have been very small.

Trusteed plans present such a range of possibilities in the establishing of investment policy that only the most
general considerations can be noted here. The trustee must invest the pension funds in accordance with the provisions of the trust agreement, and these agreements can be written with a wide variety of provisions.

First of all, the employer may completely divest himself of all control over the investment of the pension funds. He can turn over to the trustee the sole discretion as to how the fund shall be invested. If the employer has selected a responsible corporate trustee he can be reasonably certain that the care and judgement of men accustomed to assuming responsibility for investing large funds for others will be exercised in the selection of securities for the trust fund.

In this type of trust agreement, the trustee shall act in accordance with the statutes of the state and the law as set forth in court decisions governing the management of trust funds. Some states restrict the trustee to a "legal list" of securities, from which his investment selection must be made. Other states follow the "prudent man" rule, which permits the trustee to make any investment which a man of prudence would select in the management of his own affairs, considering safety of principal and income. New York State combines the "legal list" and "prudent man" principles.14

14Pension and Profit Sharing Service op. cit., para. 4206.
Secondly, the employer can relieve himself of investment problems and at the same time place certain restrictions on the trustee. For example, the trust agreement may provide that at least a certain percentage of the fund be invested in U.S. Government securities. Or it may state that no part, or no more than a specified percentage, of the fund be invested in common stocks.

Thirdly, the employer may take an active part in the investment policy of the trust fund. In the case of two large companies interviewed by the writer, the investment policy was a joint responsibility of the trustee and an advisory committee made up of company officers. The following excerpt is quoted from the trust agreement of one of these companies:

"3. Investments and Sales to be Submitted to Committee. Before making any investments or any sales of trust assets the Trustee shall submit to the Retirement Committee a statement of proposed investments and sales for its approval. The Committee within ten (10) days after the date of said statement shall advise the Trustee of its approval or disapproval of all or any of the items contained in the statement. If the Committee shall disapprove of any investment or sale, the Trustee shall not make that investment or sale but shall submit a new proposal to the Committee. The Trustee shall not be liable for any loss resulting from the retention of any assets, the proposed sale of which has been specifically disapproved by the Committee."

It should be mentioned that this same trust agreement also contains the following statement:

"The Trustee shall have as wide latitude in the selection and making of any investments as if it as an individual was the absolute owner thereof, and shall not
be restricted to the investments for Trustees prescribed by the statutes or laws of the State of Illinois, or of any other jurisdiction."

Finally, it would appear that the ultimate in flexibility of investment policy would involve the use of a trustee made up of a group of individuals who are closely connected with the company. As indicated above, this is permissable under the tax laws, so long as the trust funds are managed "for the exclusive benefit of the employees". 15

Recent trends have indicated that this flexibility of investment policy has been given relatively more emphasis, in the interest of increasing investment income accompanied by a sacrifice of the degree of security offered by insurance companies, and by trusts which invest predominately in high grade bonds. Low bond yields have caused a departure from the traditional feeling that safety is the prominent feature controlling investment policy of pension funds. 16 This trend emphasized the increasing importance of flexibility in investment policy to meet changing conditions, and to minimize pension cost even though some sacrifice of safety is necessarily involved.

15 Ibid.
Perhaps the most recent innovation in pension planning has been one which is designed to lessen the effect of a fluctuating cost of living on the purchasing power of retirement benefits. This problem has been studied exhaustively by the Teachers Insurance & Annuity Association of America, an organization which was developed for the purpose of providing college professors with retirement annuities, and which originated from a gift of ten million dollars by Andrew Carnegie in 1905. It is not within the purpose of this paper to develop even the main conclusions of this study, but it can be said in passing that, at this writing, the study has reached the point of a definite proposal. Generally, the proposal involves the investment of 50 per cent of the fund in insured group annuities, the other 50 per cent in equities, including but not necessarily limited to, common stocks. The portion of the retirement benefit to be paid from the equities fund would depend on the market value of the investments, the fluctuations in which presumably bear some relationship to the cost of living.17

This idea has been taken up by some business

Also Central Hanover Pension Bulletin, March 1952, op. cit. p. 4.
Also Pension and Profit Sharing Service, op. cit. para. 7063.
leaders, and a similar plan is now being developed by a manufacturing company. It is quite possible that this trend represents a completely new line of thinking in pension planning which conceivably could render obsolete all of the currently established philosophy.

An indication of recent trends in the popularity of various funding methods is presented in the table on page 158, taken from A Study of Industrial Retirement Plans.\textsuperscript{18} The table covers 217 new plans adopted during the period 1948 - 1950.

As a further indication of trends in choice of funding methods, this study covered 117 plans which were amended in the 1948 - 1950 period. Of these, nineteen were amended as to the method of funding, of which ten shifted from an insured method to a pension trust. There were no shifts in the opposite direction. The conclusion of the study is that there is a tendency in favor of pension trusts as compared to insured plans.\textsuperscript{19}

\textsuperscript{19} Ibid.
<table>
<thead>
<tr>
<th>Percentage of plans by method of funding</th>
<th>Plans Classified by Number of Participants</th>
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<tr>
<td></td>
<td>5000 &amp; Over</td>
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<tr>
<td>Pension Trust</td>
<td>46%</td>
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<tr>
<td>Group Annuities</td>
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<td>Deposit Administration-Group Annuity</td>
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<tr>
<td>Combination of pension trust and insured methods</td>
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<tr>
<td>Group Permanent</td>
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<tr>
<td>Individual Policies</td>
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<tr>
<td>Combination of insured methods</td>
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<tr>
<td>Unfunded</td>
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<tr>
<td>Total</td>
<td>100%</td>
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<tr>
<td>Number of plans</td>
<td>41</td>
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CHAPTER X
SPECIAL FUNDING METHODS

This chapter is devoted to particular pension funding methods which are prominent in various businesses at the present time. The only attribute which is common to all types to be discussed is the fact that these pension plans are not fully funded. This means that these funding methods do not provide for the complete funding of the actuarial liability for both past and current service at any time during the history of the plan.

The funding methods discussed are not necessarily excluded from the discussions in the chapter on insured and trusteed plans, even though full funding may have been implied in those chapters. The funding methods chosen for discussion here differ from the usual concept of pension funding with respect to the timing and amount of the contribution, and not with respect to the agency to which the contributions are made. Some of the plans discussed here may be either insured or trusteed, and the discussion in the previous chapters will apply. However, it has been considered advisable to segregate these plans for special consideration, either because of their relative prominence or their value in theoretical discussion.
Under terminal funding, no contribution is made with respect to any employee until the date of retirement. As of this date, the entire actuarial equivalent of the retirement income of the employee is usually contributed, either to a trust fund, or in the form of an annuity purchased from an insurance company. A variation of this method is one in which the amount is contributed in installments beginning at retirement date.

The terminal funding method arose in connection with the highly publicized union-negotiated pension contracts, and is being used by many companies that set up negotiated pension plans during 1949 - 1950. This type of funding method, and the method of funding to be discussed immediately following, are particularly prominent in the steel and rubber industries.\(^1\) In the negotiations in these industries, the management agreed to fund fully only the pensions of employees who retire during the contract period, which is five years in these cases. There is no commitment to fund the past service or current service cost of any other employee.

These plans qualify under Section 165(a) of the

Internal Revenue Code, and the contributions made are
deductible under Section 23(p). Since the contracts are
written for five-year periods, it may be necessary to take
the deduction under special rules, depending on whether the
plan is deemed to be permanent, within the meaning of the
law.\footnote{Pension and Profit Sharing Service, op. cit. para
5021. See also P.S. 67, issued April 26, 1951.}

FUNDING FOR EMPLOYEES WHO ARE TO RETIRE DURING THE
CONTRACT PERIOD

This funding method is closely related to terminal
funding, in that the funding relates only to those employees
who are to retire within the contract period. In this
method, however, the contribution is usually computed as
follows: The total cost to the employer is computed with
respect to all employees who are expected to retire within
the contract period. This amount is then converted to
annual or monthly installments, allowing for interest, and
contributions are made accordingly. Therefore, in this
method, contributions are not made with respect to par-
ticular individuals, but rather with respect to contract
periods.

This method is subject to the same tax regulations
as the terminal funding method, as outlined in P.S. 67.\footnote{Ibid.}
It appears that many of the employers in the steel and rubber industries have funded their plans at a rate faster than called for in the negotiated agreements. There seems to be no particular pattern to these additional contributions. Some companies have merely set aside funds in the form of reserves held by the employer, others have made contributions to irrevocable trusts or to insurance companies. For example, the Bethlehem Steel Company disclosed in 1949 that contributions in excess of the contract requirements have been made, but that the additional amounts are probably considerably less than the actuarial liability, which had not been computed at that time.

Disregarding the additional contributions, it appears to the writer that there is little to be said in favor of either the terminal funding method, or funding with respect to all employees who are to retire within the contract period. The amounts to be funded in any particular year, or in any five-year period, depends entirely on the number of people retiring. There is reason to believe that depressed economic conditions may have the effect of increasing the retirement rate, and thus the employer may be called upon to make contributions when he is least able

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4 A Study of Industrial Retirement Plans, op. cit. p. 113.

to do so. Further, it is possible that the employer may lose some tax deduction, if the contributions must be made in a series of loss or low-profit years which is longer than the carry-back and carry-forward privileges.

Considering the additional contributions which may be made from time to time in excess of union contract requirements, our appraisal of the arrangement must be altered. If the plan can qualify as a permanent plan, then it is considered by the Tax authorities to cover all employees who eventually will qualify for pension benefits. This will increase greatly the allowable deductions, and presumably all or a major part of the additional contribution will be deductible in the year of the contribution.6

Under these circumstances, it is apparent that a great amount of flexibility is available to the employer. It is possible for the employer to make contributions in good years, when he is financially able to make the contributions, and when he can take full advantage of the tax deduction. The only fixed commitment under this type of funding is the amount required to retire employees currently, assuming that sufficient amounts had not previously been contributed.

6Pension and Profit Sharing Service, op. cit. para. 5021.
This method is sometimes called the "frozen past service liability" method and is just what the name implies. The funding is limited to current service plus interest on the past service. Generally speaking, the tax regulations require that the amount funded in any year be sufficient to prevent the past service liability from exceeding the past service liability at the beginning of the plan, in order to avoid the risk of "unjustified termination" and possible disqualification. Therefore, under a funding method where no payment is made in any year on the "principal" of the past service liability, it is necessary that the current service plus interest on the past service liability be funded.

The theory of this method of funding is that so long as the pension plan remains in effect, the past service liability will never have to be funded, that there always can be an unfunded liability for past service with respect to the current working group. As long as the current service is funded each year, the fund will always be sufficient to pay the pensions as they come due, by paying past service benefits to retiring employees out of funds contributed with respect to the current service of

\footnote{Ibid. para. 4216.}
active employees.

This method requires little comment, except to say that the assumption that the pension plan will continue forever seems to be somewhat unrealistic. Even the strongest of firms may go out of business eventually, and the only equitable method for termination of a pension plan is to provide benefits with respect to all the service rendered up to the date of termination. Employees can be reasonably assured of a fair settlement only in a fully funded plan.

At any rate, the arbitrary decision never to fund any of the past service seems to have little to recommend it. This means that the employer must fund all of the current service plus interest on the past service each year. In order to allow maximum flexibility, it would seem more advisable to fund at least a portion of the past service liability in the good years. Then the company may use these contributions as a cushion in the bad years, without introducing the risk of disqualification referred to above.

UNFUNDED PLANS

An unfunded plan is one in which no funds are advanced or earmarked prior to the payment of the actual retirement benefit to employees. These benefits are paid out of the working funds of the employer as they come due.
This financing arrangement can be used with a formally-drawn plan where eligibility requirements and benefits are predetermined, or with an informal plan, where the granting of pensions is largely discretionary and is usually based on the recommendations of a committee or board at the time of retirement.

The overwhelming disadvantage to an unfunded pension plan is that no tax deduction can be claimed until the pension is paid, and the tax advantage to the employer of contributions to qualified trusts is lost. It is for this reason more than any other that relatively few unfunded plans are being adopted today. Another disadvantage is the fact that the demand for cash payments is heaviest when the largest number of retirements is in effect, which might easily occur at a time when the employer is least able to pay the pensions.

There are advantages in unfunded plans, however, particularly in cases where the plan is also more or less informal. This type of plan represents the ultimate of flexibility in planning and administration. Benefit formulas can be altered to reflect changing economic conditions, and can be made to apply to employees already retired. Special hardship cases can be treated individually, to the best interests of the employee and the company.

It is recognized, of course, that an unfunded plan, particularly of an informal nature, calls for a responsible,
forward-looking management, and is probably applicable only to companies having a long history of harmonious employer-employee relations. Also, plans of this type can probably be employed effectively only by companies which are financially strong, in order to provide some degree of security and assurance to active employees that they will receive an adequate pension when they retire.

SUMMARY AND CONCLUSIONS

Most writers on the subject of pension planning and pension financing seem to take the position that any departure from a fully funded pension plan constitutes unsound business practice, and that an unfunded or partially funded plan is to be avoided as being uneconomic. The writer would prefer to take what he considers to be a broader view, and to make the point that, under some circumstances, an "actuarially sound" plan may not be the best business practice. A few points are worthy of brief mention.

Unfunded plans, and those employing terminal funding, have been attacked on the matter of cost. It

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Also, Boyce, Carroll W., How to Plan Pensions. op. cit. p. 127.
Also, Pension and Profit Sharing Service, para. 2091. et. seq.
has been shown in a comparative table that the amounts paid out in pensions can be more than twice as much for unfunded plans as for funded plans. This is not surprising when we consider that an amount deposited to earn two percent compounded annually will double itself in thirty-five years. Funds deposited in accordance with a fully funded plan earn interest for many years, and usually at a rate higher than two percent.

It certainly does not follow, however, that the net cost of an unfunded plan is more than twice the cost of a fully funded plan. This would be true only under the ridiculous assumption that the employer using the unfunded plan would retain idle cash in his bank account in the amount that he would have invested under a fully funded plan. The truth is, of course, that the employer using the unfunded plan may use the funds which he otherwise would have invested in a pension fund in his business, and quite possibly can earn a much higher return in this manner than if he had invested in a pension fund. In other words, if the company had to choose only between investing a pension fund or allowing the cash to lie idle, it would invest in the fund, but where the choice

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is among several alternatives, such as use of the funds for payment of long-term debt, for expansion of plant assets, for use as working capital, or investment in a pension fund, the proper decision is not at all clear.

Closely related to the above problem is the accusation leveled at unfunded plans that the "costs" are deceptive. In the early years of the plan when retiring employees are relatively few, the demand for cash payments is light under unfunded plans, and to a lesser extent, in the plans using terminal funding. In the later years, the demands increase as the number of retired employees increase.

The fallacy in this argument concerns the central point of this dissertation, namely, that the "cost" of a pension plan must be distinguished from the cash payments made to fund the liability. As long as employers think of pension cost in terms of cash payments made, the above criticism is valid. The fault lies, however, not in the funding method (or the lack of it), but in the definition of "cost". The accounting portion of this paper centers around the point that the cost to the employer of a pension plan is incurred as the employee renders the service which entitles him to that pension, and that it should be recorded during this period. If companies today would record cost on this basis, the deceptive characteristic of the "cost" of unfunded and partially funded plans would
Also, there is much to be said in favor of a maximum amount of flexibility in pension financing. From the standpoint of cash budgeting, there are many advantages to be gained from the avoidance of the fixed commitment to contribute funds to a fully funded plan in accordance with a regular pattern. The fixed nature of this commitment exists particularly in insured plans. The opportunity to contribute funds to a pension plan when the cash is available and not to contribute when it is inadvisable to do so could be a vital factor in lending flexibility and stability to business operations.

Closely connected to the matter of cash budgeting is the matter of tax planning. Flexibility, at least as far as past service credit is concerned, in the financing of qualified plans gives the management the opportunity to take full advantage of tax deductions as they are needed. Many business managements realize the fallacy in the traditional rule in tax practice that all possible deductions should be taken as soon as the law allows, without regard to the effect on future years. Presumably this rule was based on the theory that tax rates in the current year were so high that they could not possibly go higher. One wonders how many tax increases are necessary to convince these people that this theory is false.

It is hoped that the above comment will not be
construed as a condemnation of all pension plans which are funded on an "actuarially sound" basis, for such is not intended. From the standpoint of security of the employee, and the insuring of his pension rights, fully funded plans are desirable. In a large number of cases, particularly small firms which have neither the financial stability nor the managerial ability to shoulder the risk that accompanies flexible pension financing policy, perhaps a fully funded plan is the only sound course. In many of these instances, insured group or individual annuities may also be called for. But certainly it is to be questioned whether sound pension planning must necessarily include actuarial soundness. In the last analysis, the greatest security an employee can have is the financial stability of his employer, and whether large fixed pension financing commitments contribute to this stability is open to serious question.

In any event, if the reader has been made fully aware of the wide variety of possible financing arrangements which are being currently used by various business firms today, then it must also be evident that the cash basis of accounting for pension expense must be wholly inadequate for the purpose of determining periodic net income. It is this background which the writer considers necessary to support the arguments in the following chapters.
PART III

THE ACCOUNTING PROBLEM
CHAPTER XI.

ALLOCATION OF PENSION COST TO PERIODS

Chapters XI and XII are concerned with the accountant's interpretation of the cost of pensions, as it relates to the problem of the determination of periodic net income. From the accountant's point of view, therefore, this chapter and the next are perhaps more important than any other chapters in the thesis.

In this analysis of the problem, the author makes every attempt to design a procedure for the assignment of pension cost to accounting periods that is consistent with existing accounting principles. This is possible, of course, only to a limited degree. It will be noted below that pension cost has some characteristics which are not found in any other phase of accounting. Furthermore, there are accountants who would question whether existing accounting principles are internally consistent. Any new problem that is designed to fit into existing principles can do so only rather loosely. Nevertheless, justification for many of the arguments presented below will be based on analogies drawn from accounting practices which exist in other areas and are considered to be generally accepted.

On the other hand, much new ground will have to be broken. In no other phase of accounting is it necessary to
make long term estimates of so many variables, for the purpose of recording a cost which is applicable to a current period. In no other phase of accounting is payment of a liability delayed for such a long period, where such payment is the only true measure of a current cost. A large portion of the discussion in Chapter XII will center around the problem of correcting estimates, where actual experience differs from estimated experience.

There is an urgent need for a high degree of uniformity in accounting for pensions, and there is, at the present time, possibly less uniformity in this matter than there is in any other area, including depreciation. The dollar amounts, in most cases, are very large, and the possibilities of "distortion" of net income are great.

In order to gain a more thorough understanding of the problem, the first portion of this chapter will consider in some detail the various practices which are followed today in accounting for pension cost, the differences which exist among the various practices, and some of the dangers which are likely to result.

CURRENT PRACTICE IN ACCOUNTING FOR PENSION COST

Perhaps the most valuable information which has been compiled on the matter of current practice in accounting for pension cost is the result of a study made by Mr.
Warde B. Ogden, CPA, of Price Waterhouse and Company of New York. While a large portion of the study is devoted to the matter of disclosure of information in corporate reports (to be discussed in Chapter XIV), there is considerable information regarding the manner in which pension expense is charged to income, and the survey may be taken as an indication of general practice.

Mr. Ogden's study covered 200 companies and 260 plans. Annual reports for calendar year 1950, or a fiscal year ending shortly before or after December 31, 1950, were studied. Of the 200 companies, 171 had stock listed on the New York Stock Exchange.

Of the 260 plans, only 123 were sufficiently described in the annual reports to determine the basis on which pension cost was charged to expense. Inadequate information is given for 49 additional plans, and "certain assumptions" were made with regard to these plans. For the present purpose, the result of the study will be limited to these 172 plans. The bases used for these plans is as follows:

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1 "Survey Investigates Accounting for Pension Costs" Journal of Accountancy, American Institute of Accountants, New York: January 1952. p. 44.
In the above analysis, "cash" basis means that pension cost is charged to income in accordance with cash disbursed, either for pensions paid, or under some method of funding. In 18 plans, this basis is used, except for the fact that the amortization of past service cost did not follow the funding of past service cost. For example, a firm might fund all of the past service cost at the time of adoption, and charge such cost to expense over the ten-year minimum period allowable for federal tax purposes.

The "accrual" basis, represented by 41 plans, means that pension expense was charged to income independent of the funding method. It is this group in which we are particularly interested, for the recommendation to be made later in this chapter will be a method which is independent of the funding. The tabulation of the methods used in these 41 plans is as follows:

<table>
<thead>
<tr>
<th>Basis</th>
<th>Number of Plans</th>
<th>Percent to Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>113</td>
<td>66%</td>
</tr>
<tr>
<td>Cash, except for amortization of past service cost</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Accrual</td>
<td>41</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
<td>100%</td>
</tr>
</tbody>
</table>
Current service, plus following portion of past service costs:

- Interest on unfunded costs 1
- Amortization over 10 years 3
- Amortization over 24 years 1
- Entire additional amount resulting from modification of plan 1
- Unexplained 6

Total estimated cost of pensions granted during the year. 6

Total estimated cost of pensions payable to all employees becoming eligible to retire during the year (whether actually retired or not) 4

One-fifth of total estimated cost of pensions expected to be granted during five-year union contract period 2

One-fifth of total estimated pension payments within five-year union contract period 1

Unexplained 16

Total 41

The above table represents such a wide variety of methods that the only conclusion to be drawn is that for 41 plans out of 172, an amount different from the amount deductible for tax purposes has been charged to income. Even this conclusion is subject to the qualification that some of the 41 plans may not qualify under Section 165(a).
While the writer did not visit enough companies to obtain a representative sample, his inquiries led to the same general conclusions that may be drawn from Mr. Ogden's study. Without doubt, it is useless to inquire more deeply into current accounting practice for pensions.

Perhaps we should inquire into the reasons for this wide variety of accounting practices. Of the many which might be mentioned, four are most important:

1) The problem, for most companies, is a new one. Accounting practices do not develop spontaneously. Accountants, and their employers, are reluctant to express prematurely their interpretation of a transaction until the major issues have been well settled.

2) Many employers and accountants have failed to recognize that pensions are a permanent part of our economy. A portion of this attitude may be interpreted as being merely an unwillingness to admit this fact publicly, for fear of unfavorable consequences.

3) Employers and accountants are reluctant to take responsibility for a cost figure that is based on so many actuarial assumptions. Admittedly there is little to guide us in these predictions.

4) Perhaps the most important reason is the influence of the income tax laws. For taxation purposes,
pension cost is deductible only "in the taxable year when paid". 2

It is not the purpose of this paper to point out the differences between the accountants' definition of income and taxable net income, but it is important to understand that the differences exist. Tax laws are written with the objective of raising revenue, consistent with the maintaining of equity among the taxpayers. There is reason to believe that this objective could never be reconciled with the determination of net income for accounting purposes. 3

It would perhaps be impracticable to allow tax deductions for pension cost on an accrual basis. The interpretation of past service cost, and the methods used to record it are too indefinite for uniform application. The taxpayer might easily be tempted to shift pension cost arbitrarily from one period to another, with the sole objective of tax savings. Perhaps more important, it could lead to adoptions of over-generous pension plans. The attractiveness of a current tax deduction might overcome the hazards of incurring a large pension liability that need not be paid for many years. The provision in

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2Internal Revenue Code, Section 23(p)(1)(A).

the tax laws for the insurance company or the qualified trust is an economic and administrative necessity.

It should be clear from the discussion in Chapter X that the cash basis of accounting for pension cost can produce such a wide variety of results that it is not acceptable for the purpose of income determination. The first step in formulating a method of accounting for pension cost is to completely disassociate the incurring of pension expense from the payment of the liability. For the reasons stated above, this principle, so easily and generally recognized in virtually all other areas of accounting, will be difficult to establish in accounting for pensions.

THE MATCHING OF COSTS AND REVENUES

Fundamentally the accountant's task in determining periodic net income involves the association of costs with the revenues for which those costs are incurred. This association is usually referred to as a process of "matching of costs and revenues", and is recognized here as the basic principle to be followed in recognition of pension expense.

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It should be noted that the "matching" principle has not met with unqualified acceptance by accountants. According to Changing Concepts of Business Income, the matching principle "gives an inadequate indication of what is actually done". According to this study, income determination is "a process of (1) matching product costs against revenues, and (2) allocation of other costs to periods". The concept of "period" cost arises from the fact that there are many costs which bear such an indeterminate relationship to revenues of any given period, that the cost is assigned to an applicable period, rather than to the revenues of the period.

The author's view of the "period" cost concept is that it does not invalidate the matching principle. Even the most ardent supporters of the matching principle admit that the phrase "matching of costs and revenues" is an oversimplified description of the process of income determination. It is presented, rather as a goal toward which accountants should strive. Every attempt should be made to improve the process of income determination by the assignment of costs to product (revenues) where possible, thereby reducing the "period" costs to a minimum.

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The attempt will be made in this paper to assign pension cost, or as much of it as possible, to the revenues to which it applies. This involves examination of the motives behind the adoption of a pension plan, the benefits derived from it, and determination of when those benefits are realized by the employer.

BENEFITS TO THE EMPLOYER

First of all, we must analyze briefly what benefits the employer is likely to realize as a result of having a pension plan. The following are listed as the most important:

1) The maintenance of a more efficient, productive, labor force, resulting from the retirement of aged, inefficient workers.

2) Creating incentive for the younger workers to advance, based on the knowledge that their older superiors will leave their positions at retirement, thereby creating vacancies.

3) Higher morale of the labor force, resulting from the elimination of money worries after retirement.

4) Reduction of employee turnover. Some employers question whether a reduction in turnover, artificially induced, is in reality a benefit. Others question whether or not the turnover is actually reduced to any significant
degree. Perhaps the best view is to limit this benefit to the portion of the turnover reduction resulting from the attractiveness of a competitor's pension plan.

To the extent that these benefits are realized by the employer, the result is an increase in the productivity of the labor force. Pension cost is incurred for the purpose of reducing other costs per unit of output. It must be clear, however, that this increase in productivity is impossible to measure in terms of dollars. We can rely only on the opinion of many business executives who assert the pension plans are "good business".

At this point we must recognize that the circumstances under which pension plans are adopted are not the same for all companies. We have in one case the employer who, after thoughtful consideration of all the factors involved, voluntarily adopts a pension plan because he thinks it is good business to do so. In other instances, we have a pension plan emerging from long, hotly-contested controversies over the management-union bargaining table, with perhaps both sides expressing dissatisfaction at the result. It is reasonable to say that in one case there is benefit to be derived in future periods, and that in the other, there is none?

The writer is inclined to answer in the negative. The principle of "matching of costs and revenues" does not necessarily imply that any cost incurred must either
(1) increase revenues, or (2) reduce other operating expenses, so that net income would be higher than in past periods, due to the incurrence of the cost in question. In the case of the voluntary plan above, it is reasonable to say that the employer anticipates a reduction in other costs due to the adoption of the plan, but in the involuntary case, there will be no increase in revenue, nor will there be a reduction in cost compared to prior periods.

The union employer, however, must measure the benefits of his plan in terms of what the current situation would have been if he had not adopted the plan. By adopting the plan, he may have avoided a costly strike, or at least incurred less illwill of his employees than he would have incurred if he had flatly refused to adopt any plan. Or, he might have slowed the general exodus of his labor supply to a competitor who had adopted a pension plan earlier. Benefits resulting from the incurring of cost must be measured, not in terms of comparison of current periods to past periods, but rather in terms of the alternative courses of action available currently. The decision to adopt a pension plan is made in the light of all the current circumstances, and is based on the well-considered opinion that future income will be larger, or losses smaller, with a pension plan than without it.
INTERPRETATION OF PENSION COST AS "DEFERRED WAGES"

It is logical to conceive of the pension plan as being of indefinite duration. This is true, even though many negotiated contracts apply only to those workers who retire within the period of the contract. This view is implied by the Treasury Regulations, in the absence of a stated date for termination. Therefore it is assumed that the pension contract applies not only to the covered employees as of the date of adoption, but also to those hired in the future who will become eligible under the plan.

Also, we must recognize that a worker must "earn" his pension by rendering services as an employee. This appears to be true even though the amount of the benefit may not bear any direct relation to the period of service. In any case, the employee must work for a minimum period of years in order to receive any benefit, and a higher minimum number of years in order to receive the maximum benefit.

It is from the assumption of a pension plan indefinite in duration, and from the fact that an employee must earn his pension by rendering at least a minimum number of years of service, that the interpretation of pension cost as "compensation for services" is derived. It seems entirely reasonable that the cost of a pension
should be accrued as the service is rendered by the em-
ployee, and that this cost is in reality a raise in wages, 
the payment of which is to be deferred until after retire-
ment.

It is at this point, however, that we must consider 
whether there is a distinction to be made between current 
service, meaning that portion of the pension benefit which 
the employee "earns" in the current period, and past ser-
vice, meaning that portion of the benefit which is computed 
on the basis of services which were rendered prior to the 
date of adoption of the plan. The "deferred wages" con-
cept is entirely logical when applied to current service. 
Both the current service cost and the benefits from the 
pension plan will continue as long as the plan is in 
existence, and it is reasonable to relate the current 
service pension cost to the employee's service which 
entitles him to the benefit.

It is important to note, however, that the bene-
fits listed above would be realized by the employer whether 
or not past service is recognized in the benefit formula. 
Also, we must recognize that past service cost is a non-
recurring cost and that, eventually, the effect of having 
recognized it will be forgotten by the working force. The 
benefits to the employer from the past service are not con-
tinuing in nature.

Why does an employer include past service credits
in the benefit formula? The answer is fairly obvious. If he did not do so, a serious inequity between the younger and older workers would result. Many long service employees would be forced to retire with inadequate pensions. Much illwill would be created, not only from the workers affected, but from the younger workers and the public generally. The benefit to the employer resulting from the past service, is, negatively, the avoidance of illwill, or positively, the creation of goodwill and employee morale, the benefits from which are to be realized in the future.

Therefore we cannot accept the "deferred wages" concept applied to past service cost. We must recognize that there is a significant difference between current service cost and past service cost, when viewed from the standpoint of the benefits accruing to the employer. Briefly stated, this can be described as the difference between the benefits of having a pension plan, and the benefits resulting from the act of adopting it. The benefit from the current service cost is continuing. The benefit from the past service cost, while it applies to the future, is of limited duration.

This interpretation of pension cost, as it relates to past service, is expressed by the Committee on Accounting Procedure of the American Institute of Accountants, as follows:
4. The committee believes that, even though the calculation is based on past services, costs of annuities based on such services are generally incurred in contemplation of present and future services, not necessarily of the individual affected but of the organization as a whole and, therefore, should be charged to the present and future periods benefited. This belief is based on the assumption that although the benefits flowing from the pension plan are intangible, they are nevertheless real. The element of past service is one of the important considerations of most pension plans and costs incurred on account of such services contribute to the benefits gained by the adoption of a plan. It is usually expected that such benefits will include better employee morale, the removal of superannuated employees from the payroll, and the attraction and retention of more desirable personnel, all of which should result in improved operations.

5. The committee, accordingly, is of the opinion that:

(a) Costs of annuities based on past services should be allocated to current and future periods; provided, however, that if they are not sufficiently material in amount to distort the results of operations in a single period, they may be absorbed in the current year.

(b) Costs of annuities based on past services should not be charged to surplus.

The Committee automatically rules out, but does not specifically consider another interpretation mentioned (but not necessarily recommended) by the Business Income Study Group, as follows:

16. At the other extreme there is the view that upon the postulate of permanence the obligation might be dealt with simply in a footnote. This proposal may seem startling, but if accounting ignores the great shrinkage in the value of assets that would result if the enterprise were abandoned, it may be asked why should it make

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a double charge against revenues for pensions over the years, first for those currently accruing and second, for those rooted in the past, seeing that the reserve created for the second charge will assume practical importance only in the event of abandonment."

By "practical importance" is meant that the past service liability will have to be paid only in the event of abandonment of the plan. As it relates to funding, this view corresponds to the "frozen past service liability" funding method discussed in Chapter X.

Following this view for accounting purposes, none of the past service credit would be charged to income. If abandonment of the plan called for payment of this liability, presumably it would be charged in that year as a "loss on abandonment", similar to a loss on dissolution of a firm, which probably would be the most frequent cause of the abandonment of the plan.

This latter interpretation of past service pension cost has little to recommend it. While the benefits to be derived from it are from the "organization as a whole", it does seem that these benefits are of limited duration, and should be recovered from the operations of the few periods following the date of adoption. Further, the "postulate of permanence" does not imply that a liability need not be recognized, merely because payment of it is

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7Changing Concepts of Business Income, op. cit. p. 66.
postponed until the day of dissolution. It must also be remembered that the past service liability as of the date of adoption is paid on the retirement date to the individuals to whom it applies. The fact that this liability is continuously being replaced by liabilities to other individuals does not justify failure to recognize it.

Finally it should be noted that many pension plans provide for a benefit formula in which the current service rate is higher than the past service rate. In others, many employers admitted that the benefit is lower than it otherwise would have been, due to an unusually high past service burden, and that, after some of the older employees retire, the retirement benefit will probably be increased. This emphasizes the fact that, in the minds of employers, all pension cost is attributable to the periods after adoption, and that employers must limit this cost to an amount which they can reasonably expect to recover from future operations.

ACCOUNTING FOR THE LIABILITY

Let us postpone for a moment the question of allocation of past service cost to income, and consider the question of liability recognition. At what point does the liability to pay pensions arise? Many accountants, who are willing to accept the proposition that past service cost should not be charged to prior periods, maintain that the employer has incurred a liability to pay pensions to the
extent of the past service cost as of the date of adoption. This line of reasoning would lead us to the necessity of recognizing that an intangible asset has been acquired as of the date of adoption. The argument runs that a liability has been incurred as a result of a "purchase" of employee goodwill. The analogy is sometimes drawn between the situation of past service pension cost and that of a long-term lease, where the lessee has a contractual liability for future rental payments, offset by a presumably equivalent asset, which is the present value of the benefit to be gained by use of the premises. The Committee on Accounting Procedure took this position with reference to the own-lease agreements in Accounting Research Bulletin No. 38.8

While the author is in substantial agreement with the Committee on Bulletin No. 38, it is believed that the differences between the two situations discredit the analogy. In the first place, the own-lease transactions were artificial, legalistic transactions designed almost wholly for the purpose of tax avoidance. For the accountant to look only to the letter of the contract, to fail to recognize that the lessee was the economic, if not the legal owner of the premises, would have been an extremely narrow view, and would have resulted in misleading

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8 Committee on Accounting Procedure, American Institute of Accountants, op. cit.
financial information. It is believed that it was the Committee's motive in Bulletin No. 38 to recommend that the accountant look through the contract, and to record the transaction in a realistic manner. It must be remembered that bona fide lease agreements are not ordinarily recorded in this manner.

Secondly, the signing of the pension agreement does not in most cases create an immediate liability to pay pensions. Even though the period may be short, the employee must work to retirement, and the liability to pay pensions does not legally appear until the employee is eligible for retirement. It is true that a few negotiated plans call for retirement under the plan of some employees in the year of adoption of the plan, and in some cases, the benefit is made applicable retroactively to employees who retired prior to adoption of the plan. In these cases only does there appear to be any necessity for recognition of the liability as of the date of adoption.

Finally, the own-lease principle, if carried to its logical conclusions and applied to all other types of contractual obligations where both the payment of the liability and receipt of the benefit are deferred to

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future years, would completely revolutionize balance sheet accounting. There might be some merit in this proposal, but discussion of it is beyond the purpose of this dissertation. As applied to pensions, there is no more reason for recognizing the present value of all the past service liability at the time of adoption, than for recognizing the present value of all pension payments, past service or future service, to be paid to all employees, already hired or to be hired in the future, at the time of adoption. It is necessary, therefore, only to have accrued fully the liability to pay retirement benefits to each employee by the year in which he retires. It is in this year that he has fulfilled all the necessary requirements to receive pension payments for the remainder of his life.

One additional point must now be made on the matter of liability recognition. In the case of the fixed-contribution plans discussed in Chapter VI, the liability is fulfilled by the contribution to the trust. As long as the payments are continued each year, there is no need to recognize liability for future payments. The employee looks to the trust, not to the employer, for his pension. Similarly in the case of most insured plans, the payment of the pension becomes the obligation of the insurance company, once the payment of the insurance premium is made. In both of these cases, the liability of the employer
is only to make the payments, and the date of retirement is of no significance as far as liability recognition is concerned.

We assume now that two points have been established; first, that past service cost is to be charged to income of the periods following the date of adoption, and second, that the liability to pay retirement benefits to each employee must be fully accrued by the date of retirement, but that there is no need to recognize the entire past service cost as a liability on the date of adoption of the plan.

COST ALLOCATION TO FUTURE PERIODS

We now turn to the problem of future periods in which past service cost is to be charged to income. Intuitively, it appears that the periods benefited are limited, that the incurring of past service cost is not one which results in an asset "as to which there is, at the time of acquisition, no indication of limited life... ...."¹⁰ It would appear that the maximum period of the benefit would end at the time when the last employee with any past service retired. Bulletin No. 36 makes the point that "......costs of annuities based on (past) services

are generally incurred in contemplation of present and future services, not necessarily of the individual affected but of the organization as a whole........ The author is in general agreement with this proposition, but would interpret "organization as a whole" to mean the working force employed at the time of adoption, and that any benefit from the past service would expire, at the very latest, in the period of one complete turnover of the labor force.

Could it reasonably be said that the benefit of the past service cost should be spread among all existing employees equally? We must keep in mind that the benefit we speak of is the benefit to the employer, not the employee. Does the benefit to the employer accrue more from future services rendered by older employees than younger ones?

It is at this point that we must depart from theoretical analysis to arrive at a workable solution. It seems to the writer that any one of a number of answers to the above question could be given, depending on the circumstances of the individual case, and that none could be refuted with any significant degree of conviction.

STATEMENT OF THE RULE

In order to provide a workable solution, the author would recommend that the past service cost be accrued over the remaining service life of the employee
involved. Strict application of this rule would involve the accrual of such past service cost for each individual employee separately. As a practical matter, it could be applied with acceptable accuracy to age groups, where the width of each group could be as much as ten years.

The effect of this recommendation is to recognize the major portion of the past service cost as expense in the early years of the plan. The following example will serve as a simple illustration. In this illustration, it will be assumed that each employee, regardless of age, must work at least five years after the adoption of the plan in order to qualify for full retirement benefits. The normal retirement age is 65.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total Past Service Cost</th>
<th>Years to Retirement</th>
<th>In Each of First Five Years</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-35</td>
<td>$7,000</td>
<td>35</td>
<td>$200</td>
<td>$200</td>
<td>$200</td>
<td>$200</td>
<td>$200</td>
<td>$200</td>
<td></td>
</tr>
<tr>
<td>35-45</td>
<td>20,000</td>
<td>25</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>55-60</td>
<td>22,500</td>
<td>7.5</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-65</td>
<td>25,000</td>
<td>5</td>
<td>5000</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td></td>
</tr>
<tr>
<td>Over 65</td>
<td>20,000</td>
<td>5</td>
<td>4000</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$124,500</td>
<td></td>
<td>$15,000</td>
<td>$6,000</td>
<td>$6,000</td>
<td>$4,500</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This recommendation is not intended as a refutation of the premise that the benefit to the employer is a morale benefit of the "organization as a whole". It is not intended to imply that past service cost attaches to each individual employee. It does not mean, for example, that an employee, aged 64 at the time of adoption of the plan, who suddenly finds that he will be entitled to a life annuity of $100 per month if he works one more year, is expected to render services valued at $15,000 plus one year's wages in his last year. It is intended merely as a practical solution to the problem of recognition of past service cost over a reasonable period in the future, since in practically all instances, there seems to be no method for determining objectively the period over which the benefits are realized by the employer. Furthermore, it appears to the writer that the major portion of such benefits would most likely be realized in the very early years after the adoption of the plan, although there can be no way of proving or disproving the validity of this observation.

It is hoped that the above rule will not be interpreted as a rationalization of objectives, for it is not intended as such. As a matter of principle, there is no reason to believe that all of the benefits of the past service will be realized by the date of retirement, merely because the contractual liability to pay such pensions arises as of that date. The rule is presented here
because it seems to have a reasonable result in most cases, and affords a practical solution to a problem which otherwise would have an indeterminate result.

There are a few instances where application of the above rule might not produce a reasonable result. For example, there are some plans which provide for immediate retirement of employees who are 65 or over as of the date of adoption. Others provide for retroactive coverage for some employees already retired as of the date of adoption. Strict application of the rule would provide for charging to expense in the year of adoption all of the pension cost of these employees, since there is no remaining service for them to render in order to become eligible for retirement. In these cases, there would appear to be some basis for the recognition of an intangible asset to be charged to future income. However, recognition of this asset makes necessary the fixing of a period over which it is to be amortized, and the burden of proof would be on the accountant who proposes this treatment.

At this point it may be well to restate the principle, allowing for the variations which exist between plans, as follows: In plans where the obligation of the employer is to pay retirement benefits, the liability amounting to the full cost of the benefit for each employee is in all cases to be accrued by the time that employee retires. In most cases, the charges will be made
to income of the years between the date of adoption, or date of eligibility under the plan, whichever is later, and the date of retirement. An exception occurs in those rare cases where the employer can reasonably determine that benefits to him from the past service cost will be realized after the retirement date of the individuals involved. This might occur where retirement benefits are made retroactive to individuals already retired. In plans where the obligation of the employer is contractually fulfilled by making a definitely determinable contribution to a trust or insurance company, the annual pension cost is deemed to be the yearly contribution, and no further liability need be recognized.

There are many advantages to be gained from the application of this principle which, in the opinion of the author, more than offsets any theoretical objections which might appear in the exceptional circumstances indicated. These advantages are enumerated below:

1) The same principle, if it applies to funding as well as to expense recognition, is actuarially sound, in the sense that no pensions are paid to retired individuals from funds contributed on behalf of a younger employee's current service. In effect, each employee has his own "fund", out of which no other employee's pension may be paid. This is a funding requirement in many insured plans.
2) While the benefits to the employer of the past service cost is not derived from the individuals benefited, but rather from the organization as a whole, it is equitable to recover the cost of such past service during the remaining working life of the employees benefited.

3) The method appears to be one which would appeal to accountants generally. It is sound and conservative, in that it recognizes the full liability for each employee by the time the employee retires. It would produce a high degree of uniformity among companies. In addition, if the funding should follow expense recognition, it would be deductible for tax purposes in every case where the minimum service period after adoption is ten years or more. And even where the period is less than ten years, it appears that the total would be deductible, if the funding is on a level premium basis (see p. 145).

In addition, the method is not original with the writer. It appears to have been first proposed, by implication at least, by Ingalls Kimball in 1929. Mr. Ogden indicates the same position in his article referred to above. Arthur H. Dean proposes essentially the same

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method, although perhaps not for the same reasons.\textsuperscript{13}

CHAPTER XII

ALLOCATION OF PENSION COST TO PERIODS (CONTINUED)

On the presumption that we have established the point that pension cost, including past service, should be accrued over the remaining working life of the employees, we now proceed to a discussion of how this rule is to be applied.

As a practical matter, the application of this rule is at least as important as the rule. The writer found, in discussions with employers, pension consultants, and others, that the objections to the rule were not so strong as to amount to disagreement. The problem of determining the amount of pension cost to be recorded each year, however, has led to many controversies. As has been indicated above, there is no other area in accounting where the calculation of a current cost involves so many future variables. The difficulties presented by these variables are so great, and the effect of them can be so substantial, that many accountants feel that an expense calculation based on them would probably be more misleading than useful. Percival Brundage writes as follows:

"It seems very questionable whether a liability can be set up under sound accounting practice for an indefinite amount based on so many uncertainties even for permanent plans. Is it wise even to report to stockholders what the computation might show when it depends on so many
variable factors? It might be more misleading than helpful.

Mr. Brundage is discussing the difficulties in recording the full pension liability for past service as of the adoption of the plan, which the writer has discussed in Chapter XI, and indicated disapproval. However, in the procedure recommended in this paper, the same calculation is necessary, and the same variables exist.

It is redundant to say that the writer disagrees with Mr. Brundage. The variables are as formidable as he has indicated, but it does not follow that we should fail to record the best estimates possible. The writer is inclined to question the negative implications of the statement that our primary efforts should be directed toward the objective of financial statements which are "not misleading". Unquestionably this is a worthy and necessary objective, but carried to its ultimate conclusions, it can best be attained by presenting no statements at all. It implies that we must establish standards of confidence in the accuracy of our figures, to the point of giving recognition to some items because of a high degree of confidence, and not to others because of a low degree of confidence. It would be a much better policy to recog-

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nize all items, then qualify them by stating the assumptions on which the items are based, allowing the reader to establish his own degree of confidence.

The opinion of Mr. Brundage is expressed somewhat more explicitly by Mr. Roy Andrea as follows:

"....As to the balance sheet, I am of the opinion that in most cases it would be misleading to express the amount of the total actuarial liability, regardless of the method adopted for making this disclosure. This sum is bound to be influenced by so many future uncertainties that, even if it were determined by well-reasoned assumptions, it could never be considered a reasonable estimate of a definite liability. I would favor an exposition, by footnote or otherwise, of the salient features of the plan relating to the potential liability, to the extent of permitting the reader to form his own conclusions in the light of all the circumstances."

The writer doubts if Mr. Andrea intended to imply that the reader of the statement is better qualified to draw conclusions than the accountant. Under Mr. Andrea's proposal, the reader will be able to draw no conclusions at all. Further, the accountant is not discharging his responsibility merely by outlining the "salient features" if he refuses to indicate, to the best of his ability, the financial implications of those features, stating the assumptions on which his conclusions rest.

Finally, we can refer to other areas of accounting

where estimates of costs have been recorded without hesitation, such estimates having been computed on the basis of assumptions which are perhaps no more reliable than those involved in pension calculations. The use of special war reserves during World War II, providing for "Restoration or alteration of facilities to peacetime production at the end of the war if it is reasonable to assume that such restoration or alteration will then be made" is an outstanding example. In addition, the recognition of estimated obsolescence of fixed assets in depreciation charges has long been sanctioned, but it would probably be fair to say that only in the exceptional case is such an estimate actually recorded. Where obsolescence is ignored in depreciation rates, the accountant does not believe it necessary even to add a footnote that "depreciation has been computed on the assumption that no obsolescence will occur." Economic obsolescence is almost impossible to anticipate, but that does not prevent us from recording depreciation.

As the problem of estimation applies to pensions, it seems that the only reasonable approach is to make the assumptions as reasonable as possible, record the result

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in the accounts, with footnotes indicating the major assumptions underlying the calculation.

For qualified, actuarially sound plans now in existence, this is essentially what is being done at the present time. The actuary makes the calculations based on whatever assumptions seem reasonable and allowable for tax purposes, and the contribution to the trust or insurance company is made on that basis. In current practice (see Chapter XI), this contribution is charged to expense, and there seems to be no particular objection to the accuracy of the figure. It is difficult to see, however, how the cash contribution lends authenticity to the figure, and it seems just as reasonable to record the expense on an actuarial basis in cases where the plan is not funded, as where the cash contribution is made.

The problem that remains, therefore, is to examine carefully the assumptions upon which the actuarial calculations are based, and determine which of them are acceptable for accounting purposes, and which are not. For those actuarial assumptions which are considered to be acceptable, the accountant must substitute assumptions of his own, chosen on the basis of whatever appears reasonable in the light of all the particular circumstances.

Having determined the assumptions which appear to be most reasonable, the accountant should depend on the qualified actuary to make the calculations. This amount
may or may not be acceptable for federal income tax purposes, even though the full amount may be funded. And even though the amount might be deductible if funded, it might not be desirable or possible to fund. In this case, the deduction could not be taken for tax purposes, until the year of the contribution. For these reasons, it should be clear that many differences will arise between pension cost for purposes of reported income, and pension cost deductible for tax purposes. The treatment of these differences presents itself as the first problem.

ACCOUNTING RESEARCH BULLETIN NO. 23

Accounting Research Bulletin No. 23, entitled "Accounting for Income Taxes" discusses the subject of the accounting treatment to be accorded items which involves differences between reported income and taxable income. Without attempting to analyze the content of that bulletin, it can be said that it advocates that the federal income taxes expense reported for the year should bear a "normal relationship" to the reported income, such normal relationship reflecting the tax rates applicable in the current year.

Assume, as a hypothetical example, that the Y

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4 Committee on Accounting Procedure, American Institute of Accountants, issued December, 1944.
Company computes pension cost of $500,000 applicable to a year in which the federal income tax rates are 60 percent. Assume further that only $400,000 of this expense will be deductible for tax purposes, due, let us say, to the fact that the recorded cost figure amortizes the past service cost more rapidly than the tax laws allow. The additional $100,000 of past service cost will be deductible in a later year.

In the current year, if we assume a recorded net income for the Y Company of $1,000,000, taxable income will be $1,100,000, and taxes payable will be $660,000, or $60,000 more than the "normal relationship" recommended in Bulletin No. 23. In order that this relationship be maintained, the entry to record taxes for the year would be as follows:

| Prepaid federal taxes | $ 60,000 |
| Federal taxes expense | 600,000 |
| Federal taxes payable | $660,000 |

In a later year when the item becomes deductible, reported net income which, let us assume, is $800,000 will be $100,000 higher than taxable net income. Taxes payable, assuming the 60 percent tax rate, will be $420,000. The entry to record the taxes for the year would be:

| Federal taxes expense | $480,000 |
| Federal taxes payable | $420,000 |
| Prepaid federal taxes | 60,000 |
Similar treatment would be applied to situations in which the amount funded and deductible for tax purposes would exceed the amount charged to income, where such excess is considered to apply to income of a later year. Assume, for example, that the Y Company reports income of $400,000 after deduction of past service pension cost of $200,000. Assume further that the past service cost funded and deductible for tax purposes is $250,000, resulting in taxable net income of $350,000. To maintain the "normal relationship", assuming a 60 percent tax rate, federal tax provision for the year would amount to $240,000, only $210,000 of which would be paid. The $30,000 tax liability would be carried forward on the balance sheet until a later year in which the $50,000 of past service cost, or any portion thereof, is charged to income. In this later year, taxes paid will exceed the tax expense, and all or a portion of the $30,000 tax liability will be liquidated.

The justification for such treatment lies in the fact that taxable net income may or may not coincide with the accountant's concept of income, a point discussed at some length in the previous chapter, and taxes legally payable in one year may be actually applicable to transactions of another year. Therefore it is desirable to allocate taxes to years in such a manner that tax expense can be made attributable to those transactions to which it applies.
Under the rule recommended in this paper, the accountant will continually be confronted with differences between pension cost for income reporting purposes, and that deductible on the tax return. In addition, it appears that the bulletin has been received by the accounting profession with mixed emotions which could not be interpreted as general acceptance. The American Accounting Association takes the position that "such disclosures should not be made by the adjustment of the 'provision for taxes' reported in the income statement; this caption should be used for the actual taxes paid or estimated to be payable". For these reasons it is felt that there is sufficient justification to ignore the provisions of Bulletin No. 23 in the remainder of this dissertation. Regardless of what one might think of the recommendation, there can be little doubt that its universal application would add unnecessary complications to an already complicated subject.

The major assumptions involved in the calculation of annual pension cost will now be discussed in considerable detail, for the purpose of determining the best estimate of pension cost applicable to the current year, along with the proper handling of the differences between the assumptions and actual experience as they arise in later years.

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FUNDING METHOD

It has been emphasized above that the incurring of pension expense must be independent of the method which is used to pay the liability. The qualification to this rule, however, concerns the earnings on the fund, in the case of a trustee plan, or the guaranteed rate of interest in an insured plan. This earning, since it usually is compounded over a long period of time, is an extremely important factor. The effect on cost of the choice between earning rates was discussed in Chapter IV. For this reason, in order to compute accurately the pension costs by periods, it is necessary that we assume some sort of funding method.

One approach would be to assume no funding at all. Pension expense could be recorded currently on the assumption that no funds would be segregated, either before or after retirement, and pensions would be paid out of the current operating fund of the employer. This is equivalent to the assumption that in the case of a funded plan all funds segregated for pensions would be held in the form of cash. If, then, in any given situation, a plan is wholly or partially funded and invested, the interest earned on the funds could be shown as a reduction of pension expense in the year of the earnings.

This approach would be a simple solution to an
otherwise difficult problem, but we are forced to discard it, primarily for lack of realism. By far the majority of pension plans today are funded, by one method or another. If the above assumptions were applied to a fully funded plan, the effect would be to show an extremely high cost in the early years, which would gradually be reduced by increased interest earnings in the later years, particularly after the past service cost had been wholly or substantially accrued. Finally, there would be no basis for the comparison of trustees and insured plans, and more important, no basis for comparison between fixed benefit plans, and otherwise comparable fixed contribution plans as discussed in Chapter VI.

It would seem much more realistic to record pension cost on the basis of a fully funded plan, i.e., on the assumption that interest will be earned on funds contributed in such a way as to be actuarially sound. This is the concept of pension cost visualized by actuaries, by pension experts, and by most accountants. Funding within rather broad limits is required for tax purposes, and varying degrees of funding are required by many union-negotiated contracts. This is not to say, however, that full funding should necessarily be a basic requirement of all pension plans.6

6See Chapter X.
Referring to Chapter V, we find that there are several methods of funding, each one of which differs significantly from the others, and each one is considered to be "actuarially sound". The three methods discussed in Chapter V are those methods which are the most widely used for funding purposes. Other methods have only minor variations from one of these three. We now have the problem of determining which of these three may be used for purposes of determining pension expense.

In choosing among the three methods, we should keep in mind the rule we have adopted, that pension cost for each employee is to be accrued over the remaining working life of that employee. We must also bear in mind that past service cost varies widely from one employee to another, and that any method we choose should be one which will fully accrue this past service cost for each employee by the time he retires.

THE LEVEL PERCENTAGE OF PAYROLL METHOD

The level percentage of payroll method spreads the entire pension benefits, past and current service, to be paid to all employees, as a level percentage of the total compensation to be paid those employees to retirement. The effect of this method is to spread the past service cost over the entire payroll, so that a large portion of the past service cost applicable to the older
employees will be allocated to the payroll of the younger employees. Therefore, the liability for pensions to the older employees will not be fully accrued by the time they retire. In effect, a portion of the pensions paid to older employees will be paid out of the current service of the younger employees.

It is important that we do not emphasize this point too strongly. We have noted in Chapter XI that under some circumstances it might be desirable to defer the past service cost beyond the date of retirement of the older employees, on the theory that the future periods are benefited by such cost. The objection to this method relates to the fact that the total liability to each employee has not been recognized at the retirement date, and not necessarily to the fact that the recording of the expense has been done incorrectly. If it could somehow be determined that the benefits to be derived from pension cost, current and past service alike, are realized as a constant relationship to the covered payroll, there would be no objection to the method. This method could be used as a basis for expense recognition, as long as the additional liability (for the difference between his total pension and the amount accrued to date) to each employee is recorded at the date of retirement, with the corresponding debit to an intangible asset account, to be written off in the future as a part of the total expense, which would remain a
constant percentage of the payroll.

However, there is no apparent reason why current and past service cost should be recorded as an expense as a constant percentage of the payroll, and since the liability is not fully accrued at the date of retirement of the individuals (subject to the rather clumsy suggestion indicated above), it should be discarded as an undesirable method.

Finally, it should be noted that the level percentage of payroll method, if it were applied to relatively small age groups rather than to the working force as a whole, becomes identical with the level premium method applied to the same age groups, if we assume that the future payroll will remain constant, which is normally the assumption to be made. (See p. 49 and 228).

SINGLE-PREMIUM DEFERRED ANNUITY AND LEVEL ANNUAL PREMIUM METHODS

These two methods are discussed together, since the most significant points are best brought out in comparison of the two.

It will be recalled from the discussion in Chapter IV that the single-premium deferred annuity method was specifically applicable to a benefit formula where the benefit is directly related to years of service. The "percent of annual compensation times years of service" is an outstanding example of such a formula. The single-
premium method assumes that the employee "earns" a certain life annuity beginning at retirement date (e.g., 1 per cent of his compensation) for each year worked while under the plan, and the cost applicable to each year is the present value of that life annuity. The outstanding feature of this method is that the cost per dollar of life annuity rises rapidly as the employee grows older, due to the fact that the time allowed for the interest to accumulate becomes shorter. The single-premium method does not require prediction of the final benefit paid each employee.

On the other hand, the level annual premium involves the estimation of the final benefit to be paid at retirement, and spreads the total cost over each year equally. Of course, the cost per dollar of benefit for an employee who enters the plan at 40 is higher than for one who enters at 30, but once established, it will be the same annually for each employee, assuming no change in the benefit.

In the single-premium method, past service cost is handled separately, since the service on which the benefit is based has already been rendered. In the level premium method, past and current service can be accrued jointly, merely by paying a level premium for the entire benefit from the date of adoption to the date of retirement. If desired (see p. 234), the two costs can be accrued separately under the level premium method by
assuming that current service cost is what the cost would have been had the employee entered the plan at his normal entry date. Any additional cost over the assumed cost is deemed to be past service cost.

The single-premium deferred annuity method cannot be applied conveniently to plans in which the benefit is not directly related to years of service. The level annual premium method can be applied to all benefit formulas, although it is somewhat inconvenient in the "percentage of income times years of service" formulas.

If we ignore past service cost, the only significant difference between the two methods is due to the interest factor, which causes the single premium method as applied to an individual to be lower in the early years and higher in the later years. The level premium method remains constant.

For accounting purposes, it would appear that the level annual premium method is the better of the two. Whether or not the benefit is related to years of service, there does not appear to be any reason why an employee should "earn" a larger portion of his pension in the later years than in the early years, and since the difference between the two methods is in reality due to interest, it would be preferable to record the difference as interest rather than as pension cost.

As noted in Chapter IV, most insured group annuity
plans are funded by the single premium method. In the author's opinion, the differences in the pension cost resulting from the two methods are not so great as to require the recording of cost of this type of plan on a level premium basis.

The level premium method has the additional advantage of being applicable to practically all benefit formulas. The widespread use of this method, particularly for trusteeed plans, would promote a high degree of comparability among plans and among companies. From this point on in the discussion, the level annual premium method will be assumed, except as otherwise noted.

RECORDING INTEREST

We now arrive at the problem of recording the differences between pension cost, accumulated by the annual premium method, and the actuarial liability, to the extent that such differences arise from the interest factor. It should be apparent that the amount of interest earned or interest expense, as the case may be, to be recorded will be the difference between the actual interest earned on the actual fund and the interest earnings on the assumed fund, the latter to be computed at the assumed rate. Therefore interest income or expense to be recorded can result from either 1) an insufficient or excessive amount in the actual fund over the assumed fund, or 2) an error, in either direc-
tion, in the assumption of the interest rate. It is entirely conceivable, for example, that the earnings on an insufficient fund might be at a rate which would be sufficiently higher than the assumed rate to offset the insufficient fund, so that the amount of the interest adjustment would be small. Or, if the fund were insufficient, and the assumed interest rate too high, the two interest factors would be additive, and interest expense could be quite large.

Assume, for example, that the Y Company computes an actuarial pension liability at January 1 of $1,000,000, based on an assumed interest rate of 2 percent, and that at December 31, the liability will be $1,200,000 after pension payments of $100,000, paid on a monthly basis. The increase in the liability during the year at 2 percent would be computed as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest at 2 percent on $1,000,000 for one year</td>
<td>$20,000</td>
</tr>
<tr>
<td>Pension cost for the year</td>
<td>278,218</td>
</tr>
<tr>
<td>Interest on pension cost for ½ year</td>
<td>2,782</td>
</tr>
<tr>
<td><strong>Total increase</strong></td>
<td><strong>$301,000</strong></td>
</tr>
<tr>
<td><strong>Less:</strong> Pension payments $100,000</td>
<td></td>
</tr>
<tr>
<td>Interest on pension payments for ½ year</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Total decreases</strong></td>
<td><strong>$101,000</strong></td>
</tr>
<tr>
<td><strong>Increase in liability</strong></td>
<td><strong>$200,000</strong></td>
</tr>
</tbody>
</table>
Assume further that the pension trust fund of the Y Company at January 1 stands at $750,000, and that the company plans to contribute $250,000 during the year, with contributions spaced evenly throughout the year. At December 31, the trustee reports that total earnings on the trust fund are $25,000. The entries to summarize the year's transactions would be as follows:

<table>
<thead>
<tr>
<th>Account</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension trust</td>
<td>$250,000</td>
<td>Cash in bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To record pension trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>contributions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension expense</td>
<td></td>
<td>Accrued pensions</td>
</tr>
<tr>
<td></td>
<td>273,218</td>
<td>273,218</td>
</tr>
<tr>
<td>To record pension expense for the year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accrued pensions</td>
<td>100,000</td>
<td>Pension trust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To record pension payments to retired employees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension trust</td>
<td>25,000</td>
<td>Interest income</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accrued pensions</td>
</tr>
<tr>
<td>To record interest earned on pension trust fund</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The interest income is reconciled as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
<th>Interest at 2 percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average liability</td>
<td>$1,089,109</td>
<td>$21,782</td>
</tr>
<tr>
<td>((1,000,000 + \frac{278,218-100,000}{2}))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average fund</td>
<td>825,000</td>
<td>16,500</td>
</tr>
<tr>
<td>((750,000 + \frac{250,000 - 100,000}{2}))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average unfunded liability</td>
<td>$264,109</td>
<td>$5,282</td>
</tr>
<tr>
<td>Actual interest income in excess of assumed rate ($25,000 less $16,500)</td>
<td></td>
<td>8,500</td>
</tr>
<tr>
<td>Net interest income</td>
<td>$3,218</td>
<td></td>
</tr>
</tbody>
</table>

It can be seen that the interest income recorded is the net effect of an additional interest cost of $5,282, due to the fact that the liability is not fully funded, and excess earnings of $8,500 resulting from earnings on the actual fund of roughly 3 percent, compared to an assumed interest rate of 2 percent. It should also be noted that any deviation of actual interest earned from that assumed is to be treated as non-operating income or expense, and not as an adjustment of current year's pension expense.

INTEREST RATE

The above illustration raises the question of the adjustment required due to an error in estimating the
interest rate at the outset of the plan. In the illustration the excess earnings on the fund were credited to income, and this method could be followed year after year. If the above situation were to recur for many years, it might indicate that the original estimate of the earning rate was too low, and that a correction is in order.

Such an adjustment would be made only in very exceptional circumstances. In the year of the adjustment, the correction of the earning rate, even by as much as one-half percent, would involve a large correction to the liability account (see Chapter IV). In case of an upward adjustment, the liability would be reduced, and the credit would have to be made either to retained income, or treated as a correction of prior year's income in the current income statement.

It must be remembered that the choice of an earning rate is based on the assumption that the plan will continue indefinitely, and that even an error in one direction for many years could easily be offset by an error in the other direction in a later series of years.

One situation is likely to require adjustment, however. Where an earning rate is originally estimated on the assumption that a particular type of security will be purchased, and if at a later date, this investment policy is changed, then an adjustment to reflect the change in policy is perhaps warranted. Many firms today are
investing large portions of their trust fund in common stocks, when it was originally intended that the investment policy would be confined to bonds. After a few years of inflation, the earning rate on the stocks, where the stocks are valued at cost, is likely to get far out of line with the original assumption. Even in this case, however, the adjustment in the rate should be a conservative one, made in the light of all the long term factors, and with the full intention that the new interest rate be permanent.

VALUATION OF SECURITIES

Closely allied to the question of the original choice and subsequent adjustment of the interest rate, is the question of the basis on which securities in the fund are to be valued. For tax purposes, any reasonable valuation basis is acceptable "provided it is followed consistently and does not result in manipulation of values or estimated costs".  

For accounting purposes, there seems to be no reason to depart from generally accepted accounting principles for valuation of permanent investments. Both stocks

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7 Bulletin on Section 23(p)(1)(A) and (B) issued June 1, 1945. Pension and Profit Sharing Service, op. cit. para. 9701.33.
and bonds should be valued at cost, with adjustment for amortization of premium or discount in the case of bonds. Adjustment for lower market values may be made where the loss is apparently permanent in nature. These losses, as well as gains and losses on sales of securities, should be shown in the income statement as non-operating items, and not as adjustments to pension expense.

RETIREMENT AGE

For accounting purposes it is necessary that the age of actual retirement of the employees be estimated for purposes of computing costs. This is a relatively simple matter where the plan provides for compulsory retirement at age 65 (see Chapter V). Many plans provide for early retirement, but usually the benefit is merely the benefit at age 65 reduced actuarially in such a way that no adjustment in cost is necessary.

A difficult problem arises, however, where provision is made for late retirement. In order to compute costs accurately, it will be necessary that the actuary make an estimate of the proportion of the working force that will retire at 65, and the proportions retiring at various other ages. Such an estimate may be reasonably accurate in cases where plans have been in existence for a long time, but even here it must be remembered that the actual date of retirement depends largely on general
economic conditions as of the retirement date (see Chapter V). Where estimates of actual retirement dates are made, any departures of actual experience from the estimate would be treated as corrections of prior years' income, or, if insignificant in amount, as adjustment to the pension expense of the current year.

An alternative approach is possible. It might be argued that current costs should be accrued on the basis of the normal retirement date, and that any savings to the employer resulting from late retirement are applicable to the additional years which the employee works. It must be remembered that one of the most important benefits of the pension plan to the employer is the maintenance of a young working force. Where the employer is willing (or is forced) to forego that benefit due to the retention of the aged employee on the payroll, the savings in pension cost can be interpreted as recompense for such penalty.

The accounting treatment accorded this interpretation would be to pay the proper amount of the employees wages out of the pension fund, i.e., the amount of the pension he would have received had he retired. In effect, the employee is placed on a pension, even though he continues to work. Some plans have given explicit recognition to this interpretation by providing that, in the case of late retirement, the employee shall begin to draw his
pension, and that his wages shall be automatically reduced by the amount of the pension.

The author is inclined to accept the second of these interpretations as the better, both from the standpoint of accounting theory, and from the standpoint of practicability. The practical advantage lies in the fact that estimates of actual retirement age need not be made.

SOCIAL SECURITY BENEFITS

As noted in Chapter V, many plans provide for benefit formulas which are incorporated with Social Security benefits in such a way that these benefits must be estimated in advance, in order to compute employer pension costs accurately.

While there is no reason to believe that Social Security benefits will remain unchanged for an indefinite period in the future, there is no ready solution to this problem, other than to assume that they will not change, and to compute costs on the basis of Social Security benefits as they now stand. The possible justification for this assumption is that when Social Security benefits are increased in the future, future union negotiations will call for the increased benefit to be enjoyed by the workers rather than the employers, regardless of the contract.
Admittedly, this reasoning has its loopholes. As noted in Chapter II, the 1950 increase in Social Security benefits was absorbed in most cases by the employer, and contributions of some firms to pension trusts were reduced substantially. Whether or not unions will demand increased benefits to offset this employer gain cannot now be determined.

If pension costs are computed on the basis of present Social Security benefits, how should a subsequent increase (a decrease is unthinkable) in these benefits be interpreted? It would appear that a correction of income of prior years is the only solution. This treatment will of course involve additional departures from the tax laws, which provide for a reduction of the contributions of future years, which offset the excessive contributions which were made in the year before the change. To give effect to the tax treatment for purposes of recording pension cost is, as indicated earlier, an unrealistic position.

MORTALITY

Mortality affects the cost of the pension plan both before and after retirement. Mortality before retirement affects the number of persons for whom pension costs are to be accrued. Mortality after retirement affects the
amount to be accrued for each retired person. The choice of mortality tables was discussed in Chapter IV.

For accounting purposes, every firm should theoretically discount pension costs for mortality, both before and after retirement. The only question which arises is the practical question of whether the number of employees in the very small firms is large enough to obey the law of averages as indicated by the mortality tables. This problem seems to fall somewhere in the statistical theory of small samples, and the advice of the actuary should be relied upon. The risk of discounting for mortality was discussed in Chapter IX.

There would be no reason to believe that actual mortality would correspond closely to the assumed mortality in any single year, and no annual adjustment should be made for the difference. Errors in the choice of the proper mortality rates would become evident only after a long period of years, in which case, adjustment should be made to prior years' income. This emphasizes the need for the choice of a conservative mortality rate, and subsequent changes should be made only with extreme reluctance.

**TURNOVER**

The effect of employee turnover is the same as that of mortality, except for the facts that its effect
is limited to the period before retirement, and that it is much more difficult to predict.

As in the other assumptions, one of two treatments is available. The first is to make a prediction of the anticipated turnover, compute costs on that basis, and in subsequent years adjust the current expense for the difference between the estimated turnover and actual experience. The other is to compute costs without predicting turnover (in effect, assume that there will be none), and in subsequent years, reduce current costs by the amounts previously credited on behalf of employees who have severed employment.

In spite of its obvious inaccuracies, the author is inclined to favor the second treatment, except in those infrequent cases where turnover can be predicted with a relatively high degree of accuracy. As indicated in Chapter III, historical turnover data is of questionable value, and whether a "wild guess" at future turnover is more accurate than to assume no turnover at all is open to question. It would appear that this problem is one which requires an element of conservatism.

Finally, as indicated in Chapter III, the pension cost reduction resulting from severance of employment can be partially offset by a vesting provision in the plan.

COMPENSATION

The assumption relating to compensation is necessary
in all plans where the benefit formula is related to compensation in one way or another, which, as noted in Chapter III, is characteristic of most plans. The "percentage of income times years of service" formula, when costs are computed by the single premium deferred method, does not require a prediction of future compensation, since the cost of the annuity relating to each year's service is deemed to be a cost of the year in which the service is rendered. This same plan, if computed by the level premium method would require either (1) the prediction of the average annual compensation for each employee (in other words, the prediction of the eventual benefits to be paid each employee) or (2) the assumption that each employee's compensation will remain unchanged until retirement. In the latter case, any subsequent increase in pension cost resulting from an increase in compensation is considered to be applicable to the years in which the increase in compensation is granted.

It would appear that the latter interpretation is warranted in any case where the retirement benefit is related to compensation. To the extent that compensation increases are voluntary actions, and the result of considered decision by the employer, then any resulting increase in pension cost would appear to have the same status. Several firms have available schedules showing
the increase in pension cost resulting from various amounts of compensation increases granted at various ages. These schedules are consulted each time an increase in wages is contemplated.

ILLUSTRATIVE EXAMPLE

The remainder of this chapter will be devoted to the presentation of an illustration which will incorporate the assumptions discussed above, and the accounting treatment thereof.

The illustration is one which is designed purely for accounting purposes, and intended only to clarify the accounting treatment outlined in the paragraphs above. No attempt is made to illustrate a realistic actuarial problem, and the assumptions on which the example is based are oversimplified. Nevertheless, an illustration of the application of the proposed treatment to a hypothetical situation might be helpful.

The illustration is based on the following assumptions:

1) Date of adoption - January 1, 1951.

2) Provisions of the plan.

   a) Benefit formula is 1% of average annual compensation times years of service.

   b) Normal retirement age is 65. Persons continuing to work beyond 65 will suffer an automatic wage cut by the
amount of the pension, and will begin to draw the pension at 65.

c) All employees aged 65 and over at the date of adoption are eligible to retire one year after adoption (January 1, 1952). All others will retire on the January 1 nearest their 65th birthday.

d) The plan is entirely company-financed.

e) No vesting or death benefits.

f) Minimum entry age is 25, but services rendered prior to that date will be counted in the benefit. (For purposes of this illustration, this service will be considered current service).

g) The anniversary date is January 1, at which date all retirements, new entries, deaths, and severance will be deemed to occur. This eliminates the problem of fractions of years.

3. Actuarial assumptions

a) Level annual premium cost method

b) Assumed interest rate - 2 per cent

c) Discounted for mortality by 1937 Standard Annuity table without adjustment.

d) Withdrawals not discounted.

Assume the following to be the pension cost calculation for the Y Company as of the date of adoption of the plan on January 1, 1951. Explanation of the calculation will follow the table:
<table>
<thead>
<tr>
<th>Age Group Inclusive</th>
<th>Average Age</th>
<th>Average Annual Earnings per Employee</th>
<th>Average Past Service (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>25</td>
<td>$3,000</td>
<td>3</td>
</tr>
<tr>
<td>30-39</td>
<td>35</td>
<td>3,200</td>
<td>9</td>
</tr>
<tr>
<td>40-49</td>
<td>45</td>
<td>3,400</td>
<td>15</td>
</tr>
<tr>
<td>50-59</td>
<td>55</td>
<td>3,500</td>
<td>22</td>
</tr>
<tr>
<td>60-64</td>
<td>62</td>
<td>3,600</td>
<td>28</td>
</tr>
<tr>
<td>65 and over</td>
<td>--</td>
<td>3,600</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Service Past and Future (Years)</th>
<th>Annual Benefit per Employee (col. 5 x col. 3 x 1%)</th>
<th>Level Annual Premium per $1 annual benefit</th>
<th>First year cost per employee (col. 6 x col. 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>$1,290</td>
<td>$0.145</td>
<td>$187.05</td>
</tr>
<tr>
<td>39</td>
<td>1,248</td>
<td>0.219</td>
<td>273.31</td>
</tr>
<tr>
<td>35</td>
<td>1,190</td>
<td>0.383</td>
<td>455.77</td>
</tr>
<tr>
<td>32</td>
<td>1,120</td>
<td>0.931</td>
<td>1,042.72</td>
</tr>
<tr>
<td>31</td>
<td>1,116</td>
<td>3.778</td>
<td>4,216.25</td>
</tr>
<tr>
<td>30</td>
<td>1,080</td>
<td>12.403</td>
<td>13,395.24</td>
</tr>
<tr>
<td>Number of employees</td>
<td>First year total cost (col. 8 x col. 9)</td>
<td>Current service (col. 6 x col. 9 x .145)</td>
<td>Past service (col. 11 - col. 10)</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------------------------</td>
<td>------------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>350</td>
<td>$65,468</td>
<td>$65,468</td>
<td>$0</td>
</tr>
<tr>
<td>240</td>
<td>$65,594</td>
<td>$43,430</td>
<td>$22,164</td>
</tr>
<tr>
<td>180</td>
<td>$82,039</td>
<td>$31,059</td>
<td>$50,980</td>
</tr>
<tr>
<td>160</td>
<td>$166,835</td>
<td>$25,984</td>
<td>$140,851</td>
</tr>
<tr>
<td>50</td>
<td>$210,812</td>
<td>$8,091</td>
<td>$202,721</td>
</tr>
<tr>
<td>20</td>
<td>$267,905</td>
<td>$3,132</td>
<td>$264,773</td>
</tr>
<tr>
<td>1,000</td>
<td>$858,653</td>
<td>$177,163</td>
<td>$681,489</td>
</tr>
</tbody>
</table>

Explanation of calculation as of January 1, 1951:

Column 1. The width of the age group is probably too great for an accurate calculation. It is assumed here for convenience.

Column 2. The average age of the employees in each group as at January 1, 1951. It should be noted that in subsequent valuations, each employee will remain in the age group where he is classified at the time of his entry into the plan.

Column 3. The average annual compensation per covered employee from the date of entry to the date of adoption. Increases in pension costs resulting from wage increases will be charged to the years in which the increase is effective.
Column 4. Years of service rendered prior to adoption date in terms of average per employee within the age group.

Column 5. Equals column 4 plus years between average age and 65.

Column 6. Annual benefit to be paid at 65 for each employee who works to retirement.

Column 7. These premiums were calculated by the writer, and may not be accurate. It is believed that they are adequate for the purposes, and are known to be internally consistent.

Column 8. First year cost per employee, both past and current service.

Column 9. Assumed employee age data.

Column 10. First year cost for the entire covered group, both past and current service.

Columns 11 and 12. Current service is computed on the basis of what the cost would have been if each employee had entered the plan at age 25. For cost accounting purposes (see Chapter XIII), it is desirable that the current service and past service cost be computed separately. Therefore the current service is the annual benefit times .145, the level annual premium at age 25 per dollar of annual benefit at 65. Column 12 is merely the excess of the first year total cost over the current service, and is the amount which will be accrued each year to the date of
retirement. The total past service liability as of the
date of adoption can be computed as follows:

<table>
<thead>
<tr>
<th>First year past service (See col. 12)</th>
<th>Years to Retirement</th>
<th>Present value of temporary annuity of $1 for number of years</th>
<th>Total past service liability January 1, 1951</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0-</td>
<td>40</td>
<td>$27,903</td>
<td>-0-</td>
</tr>
<tr>
<td>$22,164</td>
<td>30</td>
<td>22,844</td>
<td>$506,314</td>
</tr>
<tr>
<td>50,980</td>
<td>20</td>
<td>16,678</td>
<td>850,244</td>
</tr>
<tr>
<td>140,851</td>
<td>10</td>
<td>9,162</td>
<td>1,290,477</td>
</tr>
<tr>
<td>202,721</td>
<td>3</td>
<td>2,942</td>
<td>596,405</td>
</tr>
<tr>
<td>264,773</td>
<td>1</td>
<td>1,000</td>
<td>264,773</td>
</tr>
</tbody>
</table>

$681,489 $3,508,213

Note: It can be seen that the level premium method will amortize nearly 20 percent of the past service cost in the first year. In this illustration this is due to 1) an assumed preponderance of employees aged 40 and over, and 2) allowing employees aged 65 and over to retire after one year.

The entries to record the pension cost on the books of the Y Company in the first year of the plan would be as follows:

Current service pension expense $177,163
Past service pension expense 681,489
Accrued pensions 858,653
To record pension cost for the year
Assume that the Y Company put $500,000 into a pension trust at the beginning of the first year, and that the total fund earned $7,500 during the year. The entries are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension trust</td>
<td>$500,000</td>
</tr>
<tr>
<td>Cash</td>
<td>$500,000</td>
</tr>
<tr>
<td>Pension trust</td>
<td>7,500</td>
</tr>
<tr>
<td>Interest expense on pension liability</td>
<td>9,673</td>
</tr>
<tr>
<td>Accrued pensions</td>
<td>17,173</td>
</tr>
</tbody>
</table>

To record interest earned on the pension trust fund, and accrual of interest on the pension liability for 1951. (Note: the interest expense is caused partly by an insufficient fund, and partly because of a difference between the actual interest earned on invested funds and the assumed rate.)

Assume further that employee data for the Y Company for 1951 can be summarized as follows:
**Employee Data for the Year by Age of Entry**

<table>
<thead>
<tr>
<th>Average Entry Age</th>
<th>Employees January 1</th>
<th>New Entries</th>
<th>Withdrawals</th>
<th>Totals Employees December 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>350</td>
<td>35</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>35</td>
<td>240</td>
<td>14</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>45</td>
<td>180</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>55</td>
<td>160</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>62</td>
<td>50</td>
<td>0</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>65 and over</td>
<td>20</td>
<td>0</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>Totals</td>
<td>1,000</td>
<td>55</td>
<td>25</td>
<td>5</td>
</tr>
</tbody>
</table>

It is noted that there are no shifts between age groups due to change in age, since each employee is classified in accordance with the age at which he entered the plan, and not according to his attained age.

Only the results of the calculation for the second year will be shown, since the method is identical with that shown for the first year. Two assumptions were made in the second year calculation:

1) That the effect of the new entries in the higher age groups was not sufficient to change the average past service in the age group.

2) That no increases in wage granted to any employee was sufficient to change the average compensation per employee in the wage group.
### COST CALCULATION FOR 1952

<table>
<thead>
<tr>
<th>Entry Age Group</th>
<th>Cost per Employee</th>
<th>Number of Employees</th>
<th>Total Cost</th>
<th>Current Service Cost</th>
<th>Past Service Cost</th>
<th>Unadjusted Service Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>$187.05</td>
<td>370</td>
<td>$69,209</td>
<td>$69,209</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>35</td>
<td>273.31</td>
<td>251</td>
<td>68,601</td>
<td>45,421</td>
<td>23,180</td>
<td>51,829</td>
</tr>
<tr>
<td>45</td>
<td>455.77</td>
<td>183</td>
<td>83,406</td>
<td>31,577</td>
<td>51,829</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>1,042.72</td>
<td>159</td>
<td>165,792</td>
<td>25,822</td>
<td>139,970</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>4,215.25</td>
<td>43</td>
<td>181,299</td>
<td>6,958</td>
<td>174,341</td>
<td></td>
</tr>
<tr>
<td>65 and over</td>
<td>13,395.24</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td><strong>$568,307</strong></td>
<td><strong>$178,987</strong></td>
<td><strong>$389,320</strong></td>
<td></td>
</tr>
</tbody>
</table>

Since the original cost calculations were not discounted for withdrawals, the withdrawal gains will be credited to the cost applicable to the current year. Such withdrawal gains are computed as follows:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Employees Withdrawn</th>
<th>Cost per Employee</th>
<th>All Employees</th>
<th>Interest at 2%</th>
<th>Total Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>14</td>
<td>$187.05</td>
<td>$2,619</td>
<td>$52</td>
<td>$2,671</td>
</tr>
<tr>
<td>35</td>
<td>3</td>
<td>273.31</td>
<td>820</td>
<td>16</td>
<td>336</td>
</tr>
<tr>
<td>45</td>
<td>2</td>
<td>455.77</td>
<td>912</td>
<td>18</td>
<td>930</td>
</tr>
<tr>
<td>55</td>
<td>1</td>
<td>1,042.72</td>
<td>1,043</td>
<td>21</td>
<td>1,064</td>
</tr>
<tr>
<td>65</td>
<td>0</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>20</td>
<td></td>
<td><strong>$5,394</strong></td>
<td><strong>$107</strong></td>
<td><strong>$5,501</strong></td>
</tr>
</tbody>
</table>


The withdrawal gain may be credited to the past service cost for the year as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past service cost, unadjusted</td>
<td>$389,320</td>
</tr>
<tr>
<td>Less: Withdrawal gains</td>
<td>5,501</td>
</tr>
<tr>
<td>Past service cost, adjusted</td>
<td>$383,819</td>
</tr>
</tbody>
</table>

The entries to record the pension cost for 1952 would be as follows:

- **Current service pension expense**: $178,987
- **Past service pension expense**: 383,819
- **Accrued pensions**: $562,806

It will be noted that no mortality gain or loss is recorded (see p. 227), for whatever differences exist between actual mortality for the year, and that assumed by the 1937 Standard Annuity Table. It is important, however, that the management keep a record of mortality statistics over a period of years, to determine whether or not the mortality of the employee group conforms reasonably well to that of the particular mortality table in use.
If we can assume that the interpretations of pension cost as discussed in Chapter XI, and the character of the benefits to be received by the firm are generally accepted by the reader, the treatment accorded pension costs in the cost accounts presents no particular problem. All that needs to be done here is to apply these interpretations to cost accounting procedures in accordance with generally accepted cost accounting.

It will be recalled that the "deferred wages" concept of pension cost was given only partial recognition in Chapter XI. This interpretation appears to be logical as far as current service cost is concerned, in that the pension cost, the retirement benefits to be paid, and the benefits to be realized by the employer are apparently of indefinitely long duration. When the "deferred wages" interpretation is applied to past service cost, however, the logic does not appear to be well grounded. We have noted that the benefits to be derived by the employer from the cost of past service were 1) to be realized in periods after the adoption of the plan, and 2) to be realized not from the individuals who were granted the past service benefits, but rather from the
organization as a whole. We have noted that past service cost is in a sense non-recurring, and that the major portion of the benefits are to be realized primarily in the few years immediately following the adoption of the plan.

The problem to be solved here is the manner in which the above interpretation is to be incorporated in cost accounting procedure.

First of all, in spite of the differences between current and past service costs, they are both labor costs, in that they are both costs of hiring and maintaining a labor force. It would therefore appear to be necessary to allocate both current and past service pension costs to the manufacturing, selling, and administrative divisions. This is a relatively simple matter in most instances where the manufacturing payroll is on an hourly or incentive basis, and the selling and administrative payroll is on a salaried basis. In these cases, separate plans covering the two types of payroll are commonly found. This segregation of cost is not so easily accomplished where the same retirement plan covers all groups.

Secondly, in order to accomplish the treatment implied in the interpretation given above, it is necessary to make the distinction between past service and current service. While this is not necessary for purposes of annual cost determination under the level premium cost method, it is easily accomplished, as indicated in the
illustration in the previous chapter. Due to the difference in the treatment to be accorded past and current service, they shall be treated separately below.

CURRENT SERVICE

It appears that the most useful treatment to be accorded current service pension cost is to establish a predetermined rate as a function of labor cost or labor hours and apply current service pension cost as the service rendered. The establishing of the rate of application would depend largely upon the benefit formula of the plan in question. A few examples will be given.

In a benefit formula which is not related to compensation, such as those formulas commonly found in the UAW-CIO negotiated plans, it is a relatively simple matter to convert the annual pension cost to a cents per hour basis, calculated on the normal number of working hours per year. This calculation should be incorporated in the determination of the standard cost, and would follow the labor cost, both direct and indirect, in whatever allocation procedures are followed in the cost system.

Where the benefit formula is related to compensation, it is reasonable to compute pension cost as a percentage of labor cost, and the same allocation procedure would be followed. However, there remains the problem of addition-
al pension cost arising from pay increases. We noted in Chapter XII that the additional pension cost arising from a pay increase was determined not only by the amount of the increase, but also by the age of the employee at the time of the increase.

For cost accounting purposes, it does not appear to be practical to attempt to attach current service pension costs to each individual employee, even though, in the above situation, it is evident that these costs will vary among employees. It would appear to serve the purpose if an overall percentage would be computed for the entire group.

In any benefit formula where the benefit is related to compensation, it might be desirable to make the original pension cost calculation by departments, although this would depend on whether the amount and timing of the wage increases would vary between departments, and at the same time, be relatively uniform within the departments. As a general rule, such a calculation would not be necessary.

While this dissertation is concerned entirely with pension cost, a comment might be made with respect to cost accounting for "fringe" benefits generally. The view has been expressed that all labor costs of a fringe nature be accumulated in one total, and applied to labor costs at a
predetermined rate, in order that the management (and the unions) become more acutely aware of the total cost of hiring and maintaining a labor force. From the accounting standpoint, there could be no strenuous objection to this proposal on any account, and the calculation, if made with due care, should produce revealing and useful results in many cases.

A word of warning is necessary regarding the application of pension cost to labor cost by the use of a predetermined rate, where any substantial portion of the labor force is not covered by the plan. This non-covered payroll may be the result of exclusion from the plan of all employees with less than a minimum period of service, exclusion of female employees, or exclusion of non-union employees. Care must be taken to express the rate of application as a rate of the covered payroll, and the rate thus determined would have to be applied to the covered payroll.

This problem would be particularly troublesome in periods of rapid expansion of the labor force, where the new employees would not be covered by the pension plan immediately. In this case, where it is not possible to segregate the covered payroll from the non-covered payroll for purposes of applying pension cost, calculation of the predetermined rate might be more misleading.
than helpful.

The recommendations made here are based on the assumption that substantially all of the employees are covered by the same or similar plans, and in these cases, current service cost, expressed in terms of cents per hour, or as a percentage of labor cost, can be useful.

Since current service pension cost is to follow the labor cost, it would properly be included in inventory cost at the end of the accounting period.

PAST SERVICE COST

The cost accounting treatment for past service cost is not nearly so clear as that for current service. As a matter of fact, it is the cost accounting approach which forces us to take the view that current service and past service are widely different in nature, and that the benefits to be derived from the two items are different both in nature and in timing.

The result is particularly misleading when the attempt is made to attach past service cost to the labor of the individuals who are to receive benefit of the past service. The point, as indicated earlier, is that the benefits to the employer of the past service do not arise from the individuals who are to benefit by such past service. Therefore, it should be evident that past service pension cost can not follow the labor cost, as
has been recommended for current service. Further, if all fringe benefits were applied to labor cost at a predetermined rate, as suggested above, it is the writer's opinion that past service pension cost should be excluded from that computation.

The reasons for this position stem primarily from practical considerations. The past service cost is an extraordinary type of cost, and is non-recurring in the sense that it results from the pension plan adoption, which presumably occurs only once. It is true that the cost will be written off over a period of years, but in rapidly reducing amounts in most cases. A predetermined fringe benefit rate which includes past service pension cost would not be particularly useful where the wide variation in the rate from year to year would be caused by the variation in past service cost.

The non-recurring characteristics of past service cost also requires qualification. It is to be expected that the benefit formulas of many plans will be revised to provide greater benefits in the future. These revisions are likely to be especially prominent if inflationary trends continue. In the case of negotiated pension contracts, it is entirely conceivable that upward revisions in the benefits could be negotiated every five years, in a more or less regular fashion. In this sense, the past service cost could be taken out of the non-
recurring category, although to establish a pattern for its recurrence would be an extremely difficult matter.

For these reasons, past service pension cost should be included in manufacturing costs along with other types of indirect manufacturing expenses, and applied to production costs in accordance with whatever means of application appears acceptable under the circumstances. Any method of allocation of past service cost to departments or cost centers would have to be largely arbitrary. Nevertheless, the cost is "inventoriable", along with other indirect manufacturing expenses, in spite of the fact that there appears to be no objective means of allocation of past service pension cost between cost of sales and inventory.

This view is not universally held. Chapter XIV will give some indication of how past service cost is shown in annual reports. The Business Income Study Group suggests that "if income from operations is to be determined, perhaps the charge in respect of past service (less the relative tax reduction) might be regarded as coming after the determination of operating income".¹

This position, in the author's opinion, borders rather closely on the view that past service cost is a charge applicable to prior periods, charged to current

¹ Changing Concept of Business Income, American Institute of Accountants, op. cit. p. 67.
income because of "clean surplus" considerations. As such, it would have to be discarded. If we assume that it is a charge properly assignable to the current year, there is little justification for the "non-operating" classification.

In summary, it may be said that the cost accounting problems with respect to pension cost are not of first importance. Once the pension contract has been signed, the problems of cost control and cost reduction are almost non-existent. The nature of the benefit to the employer is so indirect that the assignment of pension cost to product is largely arbitrary, and is done only for the purpose of assigning a reasonable amount of cost to the inventory at the end of the period.

The question might be raised here as to whether pension costs, along with other "period" costs, are assignable to product at all, but rather to the period in which the cost is incurred. This question is fundamental to all cost accounting, and is much too broad to be discussed here. It may be said in passing, however, that we should make a distinction between accounting for purposes of periodic income determination, and accounting for the purpose of aiding future managerial decisions. Pension cost is largely an uncontrollable, period cost, but in the writer's opinion, this characteristic does not preclude the assignment of a reasonable portion of this cost
to the product on hand at the end of the accounting period.
CHAPTER XIV
PENSION INFORMATION IN CORPORATE REPORTS

The first portion of this chapter will be devoted to a brief analysis of current practice in reporting pension information in the annual reports of corporations. The second portion will be concerned with the recommendations for corporate reporting.

The pension information given in an annual report is conditioned by the accounting procedures employed by the corporation in recording pension cost. Since current practice in recording pension cost has been critically analyzed in Chapter XI, additional criticism of current corporate reporting would serve no real purpose. It will be noted below that the same lack of uniformity exists in corporate reporting that exists in the accounting procedures.

On the other hand, some examination of current corporate reporting may be useful. It lends support to the conclusion already drawn that there is an urgent need for revision of our accounting and reporting practices in the area of pensions. It provides us with a framework of acceptable reporting practice, into which we may fit the reporting procedures recommended in the latter part of this chapter. It has been noted earlier in this paper that no attempt is being made to design new accounting
principles, but rather to design a procedure for accounting for pensions that will be consistent with accounting procedures which are already generally accepted. In a rather general way, the same objective will be attempted in the matter of corporate reporting, although it must be admitted that the line between accepted and non-accepted reporting techniques is indistinct, and the degree of uniformity in corporate reporting is low.

CURRENT REPORTING PRACTICES

The only real attempt known to the author to analyze corporate reporting of pension information is contained in the series of five annual cumulative surveys entitled Accounting Trends and Techniques, prepared by the Research Department of the American Institute of Accountants.¹ This material will be referred to below in some detail, supplemented by additional information compiled by the author as a result of individual investigations. The emphasis of Mr. Ogden's study referred to in Chapter XI² is primarily on recording pension cost, and the matter of reporting is incidental in that article.

The first point worthy of note regarding corporate

¹The 1948 and 1950 Editions are of particular interest. The 1951 Edition is not available to the writer.
²Journal of Accountancy, January 1952. op.cit. p. 44.
reporting of pensions is the lack of information. It was noted in Chapter XI that, of the 200 companies included in Mr. Ogden's study and known to have pension plans, 54 did not report the amount of pension cost anywhere in the annual report. Twenty-two others included other costs in with the pension figure. In addition, of the 260 plans, 137 submitted either inadequate or no information as to how the cost was computed.\(^3\) In the 1950 Edition of Accounting Trends and Techniques, of the 525 companies included in the study, 261 either had no plan or made no mention of it. Of these 261, twelve had given some pension information in the previous year.\(^4\) Very likely many others had plans which were not considered worthy of any special mention. Of the 264 remaining companies, 181 mentioned the existence of a pension plan without giving information sufficient to determine the type of plan or the accounting treatment accorded it.\(^5\) And of the 83 plans remaining, information was often not sufficient to allow definite classification.

Therefore, the author's analysis of the information available will be limited to isolated cases, and there is no intended implication that the cases cited constitute

\(^3\)Ibid. p. 45.


\(^5\)Ibid.
anything that might be called representative of all corporations.

PAST SERVICE LIABILITY

Of primary interest to accountants, and the cause of most of the controversy among them, is the disclosure of the liability for past service credits. The author has taken the position (see p. 197) that the entire liability, both for current and past service, is to be accrued over the period of the employee's remaining service life.

According to the study of the Institute, "the estimated future liability for past service pension cost was frequently stated as supplementary information in either the auditor's notes to the financial statements or in the president's letter"\(^6\) in the cases of trustee plans. A few companies established reserves, presumably out of retained earnings,\(^7\) to cover past service costs, and payments made for past service were charged directly to such reserve. In some of these cases, the amounts charged to the reserve were net of the related income taxes,\(^8\) in accordance with Bulletin No. 23 (see p. 206).

For insured plans, the disclosure of the past

\(^6\)Ibid. p. 22.

\(^7\)Ibid. p. 67

\(^8\)For example, See 1950 Annual Report of Marshall Field & Company.
service liability is less frequent than in trusteed plans. A possible reason for this is that in most insured plans the contractual liability runs only to the current year contribution, and the liability to pay pensions, current and past service, becomes the obligation of the insurance company.

There is a weak indication that the failure on the part of many companies to disclose the past service liability can be related to the fact that the company has the right to modify, amend, or terminate the plan. In the case of termination, presumably these companies would not have to pay the unfunded past service cost. It has been mentioned several times earlier that accounting practices and reporting procedures with regard to pensions should be based on the assumption that the plan will be continued indefinitely. The assumption of continuance has been recommended by The Securities and Exchange Commission. This view is consistent with the facts, in that the termination of a plan is a dangerous and highly unlikely move, and is consistent with the intentions with which most plans are adopted.

Possibly a more compelling reason for failure to disclose the past service pension liability is the difficulty

involved in computing the amount. This point has been
discussed earlier (see p. 201).

It should be noted that the Securities and Ex-
change Commission now requires the disclosure of the un-
funded past service liability in statements filed with the
Commission, although such disclosure may be made in the
form of a footnote. 10

THE TRUST FUND

With few exceptions, companies with trusteed plans
did not show the trust fund among the assets. Although
no conclusive proof is available, this appears to be the
case, whether or not the plan is fully funded, or whether
or not the contribution to the trust discharges the lia-
bility of the company. Most of the companies which included
trust funds among the assets were companies with informal
plans. 11 In these plans, companies which disclosed the
fund usually disclosed a pension reserve of equal amount
on the balance sheet. In the usual case, however, the
trust fund was not shown whether the plan was formal or
informal. In one case (Atlas Powder Company), the trust
fund was shown as a deduction from the pension reserve.

10 Pension and Profit Sharing Service, op.cit. para. 2167.

11 Accounting Trends and Techniques - 1950 Edition
op.cit. p. 29.
In a few cases the amount in the trust fund was disclosed in a footnote or in the letter of the president.\textsuperscript{12}

**DEFERRED CHARGES**

In those cases where the past service liability was funded at a rate faster than the ten-year period allowable for tax purposes, the amount prepaid was usually set up in the balance sheet as a deferred charge. Presumably this amount is to be charged to income over the deductible period. This situation, it appears, is most likely to occur in the insured plans.\textsuperscript{13}

**THE INCOME STATEMENT**

According to Mr. Ogden's study,\textsuperscript{14} 124 out of 200 companies known to have pension plans reported the annual pension cost by the following means:

<table>
<thead>
<tr>
<th></th>
<th>Number of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Statement</td>
<td>35</td>
</tr>
<tr>
<td>Notes to financial statement</td>
<td>57</td>
</tr>
<tr>
<td>Elsewhere in the report</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>124</strong></td>
</tr>
</tbody>
</table>

There is no indication whether the companies made

\textsuperscript{12}For Example, See 1951 Annual Report, American Telephone and Telegraph Company.


\textsuperscript{14}Op. cit. p. 45.
a distinction between current service and past service cost. In the Institute studies, the analysis is limited to past service cost, possibly on the assumption that current service presents no serious problem. In the Institute report for 1950, fifty-eight out of seventy-two companies charged past service costs to income. Thirteen of the remainder charged past service costs to a reserve previously established, and one (The Lambert Company) charged income with past service costs, accompanied by a transfer from a contingency reserve to income, as a final credit, an amount "in respect of above-stated prior service contributions to Employees Retirement Plan and pensions paid to employees retired outside plan, less attributable reductions in income taxes".

Both studies lead to the conclusion that of the companies disclosing annual pension cost, most will indicate it either in a footnote or in the president's letter, rather than the income statement. In the revised S-X regulations, the Securities and Exchange Commission requires disclosure of "the annual cost of the plan". The presumption is that this requirement would include both current and past service cost, and that a footnote indicating the amount would fulfill the requirement.

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16 Pension and Profit Sharing Service, op. cit. para. 2187.
CONCLUSIONS

The above brief analysis of current practice in reporting pension information supports the conclusion that most companies think of pension cost as synonymous with payments to the trust or insurance company. Under this reasoning, there would appear to be no necessity for disclosure of additional information, such as the amount of the trust assets, the actuarial liabilities, or the distinction between current and past service cost.

Perhaps more important are the reporting practices of the relatively few companies which depart from the usual procedure. Even though most of these firms record pension cost on a cash basis, it is apparent that they are aware of the inadequacies of the procedure, and attempt to offset these inadequacies by the use of long footnotes or detailed explanations elsewhere in the report. Certainly this means of conveying accounting information is better than no information at all, but the value of such reporting practices to the average reader of annual reports is questionable. Industrial retirement plans are complicated, and adequate explanation cannot be given in the space allotted in annual reports.

This, in the opinion of the writer, is the overwhelming rebuttal to the opinion of Mr. Andrea (see p. 202), in which he recommends that the reader be permitted to
form his own conclusions in the light of all the circumstances".

RECOMMENDED REPORTING PROCEDURE

The first requisite of an adequate reporting procedure for pension information is a uniform accounting procedure which is designed independently of the means of financing. This requirement itself would eliminate the need for much of the detailed explanation referred to above, most of which is designed to offset the inadequacies of the cash basis which, as explained in Chapter XI, can take many different forms.

Another requirement of a good reporting procedure is a statement of the major assumptions on which the pension accrual is based. The extent of these explanations would depend somewhat on the degree of uniformity of accounting procedures adopted by companies generally. If all companies were to adopt a uniform procedure, many of the assumptions could be omitted from the report, since comparability could be obtained without them. In addition, many of the assumptions could be omitted after a few years, when the past service cost is largely provided for.

Finally, the explanation in the president's letter and in footnotes must be briefly and simply related, and limited to those matters of major significance.

The only variation in reporting and disclosure
requirements due to variation in type of plan would be that required by the fixed-contribution plans, discussed in Chapter VI, as distinguished from the fixed-benefit plans. These two types will be discussed separately.

**FIXED CONTRIBUTION PLANS**

It will be recalled that, in the author's terminology, this type of plan includes all those where the employer's liability is discharged by making the annual contribution to the trust or insurance company. Since the obligation to pay pensions falls on the trust fund or insurance company, the employer has no liability beyond the current contribution.

In plans of this type, it appears that no liability, real or contingent, need be shown on the balance sheet, except an unpaid liability relating to the current year. In the case of a trusteed plan of this type, the trust fund would therefore not be shown as an asset, since all actuarial and investment gains or losses are realized by the employees, in the form of increased or decreased retirement benefits. In the case of insured plans of this type, actuarial and investment gains and losses are borne by the insurance company.

From the discussion in Chapter VI, relating to trusteed plans, it will be recalled that some concern was expressed over the possibility that a moral responsibility
may exist for the company to pay the stated retirement
benefit, in spite of the fact that the contract specifi-
cally provides otherwise. The decision was made in Chapter
VI that the accounting should follow the contract, but it
does appear that the moral responsibility to pay benefits
is significant enough to require a full explanation of the
facts.

For example, the following paragraph relating to
a hypothetical trusteeed pension plan of this type might
appear in the president's letter or in a footnote to the
financial statements:

"Beginning January 1, 1950, the company agreed to
deposit annually with a trustee the sum of ten cents per
man-hour worked each year. The trust fund is established
for the purpose of paying retirement benefits to all
qualified employees when they reach 65. Studies made by
independent actuaries have indicated that these contribu-
tions will, under normal conditions, be sufficient to
provide a retirement benefit of $100 per month less
Social Security benefit, and payments made to pensioners
have begun on that basis. According to the pension con-
tract, the company has no liability beyond the above-
mentioned annual contribution, and excesses or deficiencies
due to actuarial or investment gains or losses in the fund
will result in revision of the retirement benefits."

For a typical insured group annuity plan, the
following explanation is suggested:

"In 1950, the Company and the Union agreed to the
establishment of a retirement plan for all union employees,
to begin on January 1, 1951. Both the Company and the
employees are to contribute to the cost of the plan, which
is to provide a retirement benefit at 65 of one-percent of
average earnings times years of covered service. The
retirement plan is to be financed by the purchase of single
premium annuities from one of the largest insurance companies.
Premiums are being paid to the insurance company with respect
to all covered employees currently. Actuarial and invest-
ment gains and losses are borne by the insurance company,
subject to the qualification that premium rates are subject to review and revision every five years."

In order to comply with Securities and Exchange Commission requirements, the annual cost of the plan and the unfunded past service liability are to be disclosed. In addition, other features of the plan which are of particular importance should be made clear in additional footnotes as required.

**FIXED BENEFIT PLANS**

In plans where the essence of the agreement is that the employer pay a stated or definitely determinable benefit to retired employees, more detail should be given in the annual report. In this type of plan, it will be recalled that the method of financing is incidental to the plan, and the cost is to be accrued in accordance with the suggested procedure outlined in Chapter IX, independent of the financing method. The most important of the assumptions used to compute pension costs should be disclosed.

The following explanation is suggested for a typical plan.

"Having received the approval of the stockholders in the 1949 annual meeting and the approval of the Commissioner of Internal Revenue, the formal retirement plan for all of our salaried employees has gone into effect as of January 1, 1951. The plan provides that each covered employee with at least 20 years of service will receive upon retirement a monthly benefit of 50% of his average monthly earnings for the ten-year period prior to retirement, less primary Social Security benefits. Benefits for employees with less than 20 years of service are reduced proportionately.
"The company is providing for the entire cost of the plan, both current and past service, by charges to income, in such a way that the cost of each employee's retirement benefit will be fully accrued by the time he reaches the age of 65. The cost calculations have been made by competent actuaries, and are based primarily on the following assumptions:

1. That the charge to income with respect to each employee will be an equal amount each year, such amount being determined by his age and length of service at the date of entry.

2. That the existing level of salary scales will remain the same. This assumption anticipates salary increases due to merit and length of service. However, increases in the general wage level, due to possible future inflation, will be provided for as such increases occur.

3. That the existing level of Social Security benefits will not change.

4. That interest of 2 1/2 percent can be earned on funds invested.

5. That all employees will retire at 65, although the plan does not provide for compulsory retirement until age 68.

"Included in "Other Costs and Expenses" in the income statement is an amount of $450,000 of pension cost, of which nearly $275,000 represents past service cost. The total contingent liability for past service amounted to $1,000,000 as at the beginning of the year, roughly 85% of which will have been accrued by 1956.

"In order to finance the pension payments, the Company is making annual contributions to a trust fund, about 50 percent of which will be invested in bonds and notes, and the other 50 percent in high grade common stocks. The amount of the annual contribution will be varied from year to year as the circumstances require, except that in no case will the contribution be less than the minimum required by the Federal tax regulations. As shown in the balance sheet, the trust fund amounts to $375,000, with securities valued at cost, as compared to a total liability of $460,000, of which an estimated $25,000 will be paid to pensioners in the coming year."

The above suggested explanation may appear to be
unduly long for purposes of an annual report. Much of it might be omitted after the plan has been in existence for a few years, and after readers of financial statements become more accustomed to pension plans. The above explanation is based on the assumptions that the plan has just been adopted, and that the method of recording the accrual is sufficiently unique to require explanation.

As indicated above, the writer recommends strongly that the trust fund be shown as an asset, and that it should not be deducted from the liability. In the fixed-benefit type of plan, it must be remembered that the contribution to the trust does not constitute a discharge of the pension liability. Whether or not the control of the trust assets rests with the management, the fact remains that excesses or deficiencies which may develop in the fund are to be absorbed by the employer. The fact that the contributions are made "for the exclusive benefit of the employees" does not mean that the liability has been paid.

In a detailed balance sheet, the composition of the fund should be disclosed. This is particularly important where a significant proportion of the fund is in the form of equity securities, or other types of investment, the market price of which is likely to vary from the purchase prices to any significant degree. In general, securities should be valued at cost with market prices shown parenthetically.
In addition, funds deposited with an insurance company under a deposit administration contract should be shown as an asset, if the plan is of the fixed benefit type. It will be recalled that the only significant difference between this type of contract and a trusteed plan is that the insurance company guarantees the minimum rate of interest.

An interesting problem of balance sheet presentation arises when a portion of the pension fund is invested in the stock of the employer. A few outstanding examples of this type of investment policy are Sears Roebuck & Company, the Dupont Company, and the United Fruit Company. Bonds of some operating companies in the Bell System are held in the pension trusts of other operating companies, although care has been taken to avoid the investment of any of the pension funds of an operating company in its own obligations.

The question is whether the securities of the

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employer should be treated as assets, or whether these securities should be deducted from the stockholders' equity, as in the case of treasury stock. In the fixed contribution plans, it will be recalled that the annual contribution has been interpreted as the payment of the current year's pension liability. The question here is whether the subsequent purchase by the trustee of the securities of the employer has any effect on the interpretation of the contribution. It is conceivable that such a purchase might be interpreted as the acquisition of treasury stock by the pension trust, and would therefore require the deduction of such stock from the stockholders' equity, with consequent restoration of the liability by the amount of the cost of the securities.

In the case of fixed contribution plans, the treasury stock interpretation has little justification. The investment of the pension funds in the securities of the employer does not alter the fact that the pension liability has been paid by the employer, and that he has no further liability. Such investment undoubtedly has interesting implications regarding the ultimate success or failure of the pension program, but, according to the contract, this is a matter between the trustee and the employees. Eventual failure of the employer, and consequent worthlessness of the securities, would destroy or seriously impair the ability of the fund to pay pensions,
but the employer will have fulfilled his obligations.

The fixed-benefit plan poses a different problem. In these cases, the question is whether securities of the employer can be included in the trust as an asset, or whether they are to be deducted as treasury stock.

The treatment of treasury stock as a deduction from the stockholders' equity is based largely on the similarities between treasury stock and unissued stock.\textsuperscript{21} The acquisition of the securities by the corporation is interpreted as a contraction of stockholders' equity, and subsequent reissue of such stock is interpreted as a new capital-raising transaction. Although this principle is violated by a substantial number of companies in annual reports, the author is inclined to agree with most accountants that treasury stock is not an asset under any circumstances.

It must be noted, however, that there are significant differences between stock of the employer held by a pension trust and treasury stock. Stock in a pension trust can be voted by the trustees of the pension fund; treasury stock has no vote. It must be remembered that a qualified trust is established for the "exclusive benefit of the employees", and that none of the assets may be diverted

for corporate purposes. Therefore, it would seem that the employer does not have the right to retire such stock with consequent reduction in formal authorized capital. Shares of the employer in the pension trust do not fit the generally recognized conception of treasury shares.

On the other hand, can an employer "provide" for the payment of future benefits to his employees by investing pension funds in his own stock, as he would in the securities of another corporation? Or is the purpose of such "investment" to impress on the employee that the success of the retirement program is inextricably tied to the success of the company? It would appear to the writer that the latter interpretation is the better of the two. Most companies which invest in their own stock invest heavily. United Fruit Company pension trust had 199,500 common shares in its trust fund at December 31, 1950, making up more than 25 percent of the total fund. Sears Roebuck & Company profit sharing trust is the corporation's largest stockholder. The objective in these cases is to give the employees a "stake" in the future of the company, and the security of the pension trust appears to take a position of secondary importance.

In fixed benefit plans, investment of the pension

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221950 Annual Report. op.cit.

23Catalogues and Counters, op. cit. p. 684.
funds in the securities of the employer would appear to be risky business. In the event of a serious downturn in the affairs of the Company, resulting in severe depression in the market price of the securities, the employer presumably would be obligated to offset the losses by additional contributions, at the very time when he is least able to do so. Inability to make up these losses would result in failure of the plan, possibly affecting employees already retired as well as those currently on the payroll.

For these reasons, the writer would favor showing employer shares in the trust fund as a deduction from the stockholders' equity in the fixed-benefit plans. This treatment would require full disclosure of the facts, and clear distinction should be made between shares held in the pension trust and treasury shares available for reissue or retirement. Shares of the employer in the pension trust fund are not treasury shares in the ordinary sense, but neither should such shares be considered an asset of the employer.
APPENDIX A
COMPANIES VISITED

American Educational Press - Columbus, Ohio
Battelle Memorial Institute - Columbus, Ohio
Buckeye Steel Castings - Columbus, Ohio
Capital Finance Company - Columbus, Ohio
Ceco Steel Products, Inc. - Chicago, Illinois
City National Bank - Columbus, Ohio
Columbus Auto Parts - Columbus, Ohio
Columbus Bolt & Forging - Columbus, Ohio
Columbus & Southern Ohio Electric Company - Columbus, Ohio
Columbus Show Case Company - Columbus, Ohio
Farm Bureau Insurance Companies and Affiliated Organizations - Columbus, Ohio
H. M. Ritter Lumber Company - Columbus, Ohio
Inland Steel Company - Chicago, Illinois
International Harvester Company - Chicago, Illinois
The Mead Corporation - Dayton, Ohio
Marshall Field & Company - Chicago, Illinois
Ranco, Inc. - Columbus, Ohio
Sears Roebuck & Co. - Chicago, Illinois
White Castle System, Inc. - Chicago, Illinois

PENSION CONSULTANTS INTERVIEWED

Booz, Allen, & Hamilton, Management Consultants - Chicago, Illinois (Mr. Newman)
Continental Illinois National Bank and Trust Company - Chicago, Illinois (Mr. Benninghogan)

Carlin & Carlin - Columbus, Ohio (Mr. Oscar Carlin)

J. N. Meeks and Company - Columbus, Ohio (Mr. Meeks)
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Other


AUTOBIOGRAPHY

I, Paul Emmet Fertig, was born in Noblesville, Indiana, July 13, 1920. I received my secondary education in the public schools of that city. My undergraduate training was obtained at Wabash College, Crawfordsville, Indiana, from which I received the degree Bachelor of Arts in 1941. From the School of Business Administration of the University of Michigan, I received the degree Master of Business Administration in 1947. In 1948, I was granted a Certified Public Accountant certificate from the State of Illinois. I received an appointment as Instructor in The Ohio State University in 1948, and have held that position to the present time while completing the requirements for the degree Doctor of Philosophy.