INDUSTRIAL RETIREMENT SYSTEMS BASED ON THE MONEY-PURCHASE PRINCIPLE

BY

J. H. WOODWARD

"The cardinal principal of social policy is to make youth adventurous and keep age secure." Beveridge—*Unemployment.*

PURPOSE OF THE PAPER

It is becoming increasingly frequent for actuaries to be asked for advice as to the best means of providing pensions for the employees of large industrial establishments. The matter of pensions for employees in the public service has been given much attention during recent years and the reports of commissions appointed to investigate that subject, as well as the more recent legislation in that field, contain evidence that the theory of pensions and pension schemes is coming to be better and more generally understood. In the field of private enterprise, however, little has been accomplished. Most existing pension plans in use by large employers of labor are unsatisfactory in that they furnish no effectual guarantee to the employee, and that their financial feasibility is dependent on a continued growth of industry at the rapid rate at which that growth has proceeded during the past few decades. Many employers are coming to realize that the problems involved are far from simple and that technical advice is indispensable.

In the past much of the labor of actuaries has been expended in devising means for correcting or ameliorating conditions which, if sound technical advice had prevailed at the starting of the plan, would not have arisen, and it is worthy of note that most of the papers in actuarial journals relating to pension funds have to do with the valuation of existing funds and with the determination of the rates of contribution required to pay benefits provided under an already existing plan rather than with the fundamental principles which should be followed in formulating the systems. The main purpose of this paper is to stimulate a discussion of what those principles should be, and, more especially, to emphasize the advantages of systems based on the so-called money-purchase principle.*

What is a Pension?

A pension in the modern sense may be regarded as a form of deferred wages. It represents money payments for services rendered, the only difference between pensions and ordinary wages being the fact that the money, in the case of pensions, may be paid to the employee many years after the time at which the services in respect of which the pension is paid, were performed. The fact that, because of the long period of time involved, compound interest is an important factor, does not change the true nature of the transaction. In ancient times pensions were a form of patronage extended by a sovereign to his subjects, either as a reward for political services, as a subsidy for the encouragement of artistic, literary or scientific activity, or for other reasons. The old age pensions today provided by many European governments are in the nature of state gratuities and nothing more than a modified form of poor relief. The modern industrial pension, however, and the pension granted by governments to superannuated civil servants, is not, properly speaking, a gratuity or benevolence. It is, on the contrary, just as much a part of the employee's wages as though it had been included in his weekly pay envelope. It is, or should be, one of the inducements which influence him to enter or to remain in the employment. Any pension system, therefore, which leaves the way open for a default after many years of faithful service rendered, or which imposes conditions involving the forfeiture of the employee's accrued rights, either at the time of resignation, dismissal, or at his death, may be considered to be on the defensive so far as its social justice is concerned.

Past and Future Service

It is proposed to accept the deferred wage principle and to examine into some of the inevitable consequences of that accept-

*For the most complete exposition of the meaning and theory of the money-purchase plan, reference should be made to *Pensions for Hospital Officers and Staffs. Report of a Sub-Committee of the Executive Committee of King Edward's Hospital Fund for London*, London, C. & E. Layton, 1919 The chairman of the committee was Mr. W J. H. Whittall, F. I. A.

ance. We may first note that the service in respect of which a pension is paid falls into two classes, (1) past service, and (2) future service. Past service may be either (a) already provided for, or (b) unprovided for (as when a new scheme is introduced or an old scheme is insolvent). Existing employees have past service to their credit, whereas new entrants into employment have only future service. It is advisable first to seek a correct solution for new entrants. The question of what to do about unprovided for past service of existing members should invariably be given separate consideration.

What Determines the Scale of Benefits?

Consider a group of employees whose industrial career is just commencing. Assume that these employees are young, and that they have been in the employ of the employer for a period of two or three years so that they represent not casual employees but employees whose likelihood of remaining with the establishment is fairly high and who constitute a class from which the key men of the organization will later be drawn. What are the considerations which determine the form and amount of the pension benefit to be granted or provided for, and of the incidental insurance benefits which may appropriately form a part of the general scheme? The answer to this question is fundamental. It depends to some extent upon the ability of the average human being to understand insurance principles. It depends mainly on the proportion of the wages which it is feasible and practicable to defer. Measures which tend to limit the current consumption of income as it is earned must be sufficiently moderate to insure that the psychological resistance to the plan will not be so great as to defeat it.

Chief Purpose of a Pension Plan

The chief purpose of a pension plan is to provide an income for the employee for the remainder of his life after he reaches an age at which he may be presumed to be incapacitated from satisfactorily and efficiently performing the duties of his occupation. The view which has been sometimes expressed by civil servants that a pension plan should enable an employee after a certain number of years of service, regardless of age or disability, to retire on pension, seems unworthy of serious consideration: the doubtful blessing of retirement while still active may well be left to be attained wholly through individual initiative.

Since the accumulation of a sufficient fund to purchase an old age annuity involves the building up of considerable sums of money which—if the annuity benefit were the only benefit provided—would in many cases be sacrificed or forfeited in the event of death before reaching the pension age, it follows that this accumulating fund may conveniently be made the basis of a death benefit which will be one of the subordinate benefits of the general system. Furthermore, the permanent incapacity to labor is by no means wholly dependent on age and may be brought about at a relatively early period in the employee's career through accident or sickness. In such cases it is highly desirable that a retirement allowance should commence at once and a benefit for permanent and total disability is therefore one which conveniently fits into and should form a part of every comprehensive pension scheme. Temporary sickness, on the other hand, is a misfortune which can not be so conveniently insured against under pension plans and which it is better to provide for under a separate system. The remaining classes of economic catastrophe to which the wage earner is liable, the principal of which are unemployment and sickness in his family are also better left to be provided against by separate measures.

Four Kinds of Benefit

In a logically constructed retirement system we have four forms of benefit whose basis is to be determined: (1) an old age annuity; (2) a death benefit; (3) a disability annuity; (4) a withdrawal benefit.

The Old Age Benefit

There are two theories as to what should be the measure of the old age benefit—one that it should provide an amount which may be considered to be the minimum of subsistence; the other, that it should enable the employee to continue to live at the same standard of living to which he has been accustomed, or, what is practically the same thing, that his wages or salary should be continued without diminution in amount. Obviously, the second theory produces the most desirable condition of affairs on the assumption that it is possible and expedient for industry to assume so heavy a burden. In practice, however, the actual scale of benefit will be a compromise between these two extremes, depending upon what proportion of the wages it is practicable to defer.

Under modern conditions of industry, it seems too much to expect that the average wage earner with a family can be persuaded or compelled to defer or forego for future consumption more than about 10 per cent of his earnings. In many individual instances, of course, the amounts saved from present consumption consist of very much more than 10 per cent, but the constant pressure for an improved standard of living—or, more accurately, a standard involving a more liberal expenditure of money—is so great as to impose a powerful, if indefinite, psychological limit on the possibility of deferring wages for pension or insurance purposes. The inability or unwillingness to save is not so much due to lack of foresight and intelligence as it is to habit, environment and the personality of the individual. It is a matter of common observation that it is not so much the low paid man who is unable to save as it is the man whose pay is relatively low as measured by the demands which a complex civilization has thrust upon him.

The Cost of the Superannuation Benefit

In order to give the employer who is commencing a study of this question some conception of the heavy cost of providing an old age benefit on the money-purchase principle—the only principle which in the long run completely meets the several tests of a sound and equitable pension system—it will be well to submit to him the short and simple tables which follow:

TABLE A.

Amount to which $100 per Annum, Paid at the Beginning of each Year, will Accumulate in the Specified Number of Years at 4% Compound Interest.

Years	Amount
5	$563.30
10	1,233.60
15	2,032.50
20	3,096.90
25	4,331.20
30	5,832.80
35	7,659.80
40	9,882.70
45	12,587.10
50	15,877.40

TABLE B.*

ANNUITY (FIRST PAYMENT IMMEDIATE) PURCHASED BY $1,000 AT VARIOUS AGES ON THE BASIS OF MCCLINTOCK'S ANNUITANTS TABLE OF MORTALITY (MALE LIVES) WITH INTEREST AT 3½%.

Age	Annuity
55	$77.18
60	88.55
65	104.18
70	125.95

TABLE C.

ANNUAL PENSION PURCHASED BY A CONTRIBUTION OF $100 PER ANNUM FOR VARIOUS ENTRY AND RETIREMENT AGES.

Entry Age	Pension			
	Retirement Age			
	55	60	65	70
20	591.18	875.11	1311.32	1999.76
30	334.28	516.49	798.00	1244.73
40	160.73	274.23	451.22	734.64
50	43.48	110.33	216.95	390.05

As a simple example of the use of the tables, take the case of an employee entering the system at age 30 and who desires to retire at age 65. Assume that he contributes—or that there is contributed in his behalf—amounts equal to approximately 10% of his salary as follows: up to age 40, $100 per annum; ages 40 to 50, $150 per annum; ages 50 to 65, $200 per annum. Then, from Table C, his pension will amount to $798.00 + ½ ($451.22) + ½ ($216.95) which equals $1132.09. That is to say, at age 65 he can retire on a pension equal to about 57% of his then salary of $2,000. The cash accumulations in his account are found from Table A to be $7,659.80 + ½ ($4,331.20) + ½ ($2,082.50) = $10,866.65. Referring to Table B, $10,866.65 × $104.18 = $1,132.09, which checks with the result found directly from Table C. These accumulations would, as will be

*No special significance is to be attached to the particular tables of mortality and rates of interest used in this discussion. In actual practice these should be chosen to fit the circumstances. Provision must also be made in practice for meeting the administrative expenses of the scheme. If the scheme is insured under a participating arrangement, any savings from mortality or loading together with interest earned in excess of the assumed rate, may be used to increase the benefits.

later explained, be payable as a death benefit if death occurred just prior to the due date of the first pension payment, and they need not be forfeited in event of resignation or dismissal.

Table D shows the percentage of contribution necessary to provide a pension of 50% of the salary for various retirement ages and terms of service assuming that the salary remains constant throughout the term.

TABLE D.*

PERCENTAGE OF SALARY REQUIRED TO PROVIDE A PENSION OF 50%.

Retirement Age	Term of Service			
	40 years	30 years	20 years	10 years
55	6.6	11.1	20.9	50.4
60	5.7	9.7	18.2	45.3
65	4.9	8.2	15.2	38.4
70	4.0	6.8	9.9	31.8

AGE AT RETIREMENT

As to the age at which pension payments should commence, it is clear that any plan which is to avoid waste of human effort must in this regard be flexible. In some cases there will be greater reasons for retirement at age 60 than in others at age 70. The general principle would seem to be, however, that the age at which retirement is to be absolutely compulsory should be high—say age 70. At the earlier ages retirement should be had either at the option of the employee or the employer, the pension benefit, however, being reduced as the age decreases, both by reason of the shortening of the term of service and of the increasing value of the annuity to be granted. Under a system founded on a proper principle, it should not be necessary to impose arbitrary limits, but the age of retirement and the amount of

*It should be carefully noted that the percentages of salary given in the table apply to the salaries of *only those who are members of the scheme*, not to the entire pay-roll of the establishment. Thus, if there is a probationary period of three years before an employee enters the scheme, and if one-half the payroll of the establishment is disbursed to employees who have been less than three years in service, then the cost of the plan measured as a percentage of the entire pay-roll is one-half the percentages shown in the table. The "term of service" should be taken as commencing at the end of the probationary period.

the pension should be so coordinated as to bring about equitable results under any conditions.

Options at Retirement

It will be further necessary to protect the scheme against the injustice which might arise in the event of death soon after the age of retirement. The practical necessity of introducing an option for this purpose is easily seen. An employee is getting along in years and is known by the employer to be in ill health. The employee is retired and, after receiving pension payments for a few months, dies. The entire reward, therefore, for having foregone a percentage of his salary over many years may consist in a few months' pension payments. While, presuming absolute good faith on the part of the employer, such a result might be defensible on purely actuarial grounds, it would never be accepted by the friends or relatives of the employee without creating an antagonism and, furthermore, it might easily lead to charges that the employee had been retired for the specific purpose of avoiding the payment of the death benefit which would have accrued if his death had occurred while in the service. Again, the employee's wife may still be living and it may be highly desirable to make specific provision for her. At least three alternative options should, therefore, be provided at the retirement age: (1) a life annuity with no return at death; (2) a life annuity with the return at death of the excess, if any, of the withdrawal benefit at date of retirement over the sum of the actual pension payments received; (3) an annuity for a reduced amount to continue during the life of the employee and during the subsequent lifetime of his widow should she survive him. The provision of these three options would permit such a choice to be made by the employee at the time of retirement as might be indicated by his condition of health and his conjugal status and would prevent any serious misunderstanding or charges of injustice against the scheme.

The Death Benefit

We may next direct attention to the benefit which would be received in the event of the death of the employee before attaining the pension age. In the case of establishment funds paid for wholly by the employer, such death benefit as may be provided is generally independent of the pension accumulations, whereas under a money-purchase system such as has been described, there is an increasing death benefit which varies from a few hundred dollars in the early years up to a relatively large sum as the retirement age approaches. (See Table A.) The forfeiture of this benefit in the event of death in the service would of course result in a material cheapening in the cost of the plan. While the principle involved in benefits of the pure endowment or deferred annuity type is entirely sound from an actuarial standpoint, it is nevertheless one which appears difficult of popular apprehension and any pension plan which involves the principle of forfeiture on premature death is likely to produce dissatisfaction among its beneficiaries. In the case of establishment funds on a contributory basis, where the employee's contributions are returned with interest in the event of premature death, then, of course, the reduction in cost produced by forfeiture would be proportionate to the employer's contribution only.

The economic function of the death benefit which forms a natural part of any pension scheme is to provide for the support of the dependents of the employee in the event of his death before reaching the retirement age. There are, however, a number of other important considerations arising from the necessity of providing a plan which will as far as possible minimize misunderstandings on the part of those not familiar with the principles of insurance. Suppose, for example, that a withdrawal benefit was granted but that no death benefit was granted. Obviously, in such cases it would be undesirable for the employee to die in the service, and any employee on his sick bed would undoubtedly, if he understood his rights, resign in order to preserve his equity in the pension scheme. If, through neglect or ignorance, he failed to resign, there would be the embarrassing question of the extent to which it would be fair and proper to take advantage of such neglect or ignorance. If the withdrawal benefit were greater than the death benefit, the same condition would hold to a lesser degree. It follows, therefore, that the death benefit must at least be equal to the withdrawal benefit which, as we have seen, should, if the principles of the money-purchase plan are followed, be equivalent to the accumulated contributions set aside to provide the pension. The basic portion of the death benefit should therefore consist of the accumulated contributions. Such accumulations, however, while entirely adequate during the later years of employment, are relatively small during the early years, while the actual necessities of the family may be greater at the younger ages. It will be found advisable, therefore, to construct the death benefit by taking the withdrawal benefit as the base and supplementing this benefit by additional amounts of life insurance at the younger ages. This can be conveniently accomplished by setting aside a small constant percentage of the wages—say one per cent—and using this to purchase additional one-year term insurance, the amount of the insurance to be added to the benefit decreasing each year per dollar of premium as the age increases. In this way the total death benefit, while it will still increase from year to year, will commence at the younger ages, when the need of life insurance is greatest, at a relatively high amount

As an illustration of the amount of additional insurance which might thus be provided, the following table shows, on the basis of the American Experience Table of Mortality with 3½% interest the amount of insurance purchasable at several ages for an annual premium of $10.

TABLE E.

AMOUNT OF ONE-YEAR TERM INSURANCE PURCHASABLE AT THE SPECIFIED AGE FOR AN ANNUAL PREMIUM OF $10
AMERICAN 3½% (NET.)

Age	Amount of Insurance
20	$1326
30	1228
40	1057
50	751

A consideration of the figures in this table in connection with those shown in Table A will serve to give a rough idea of the total death benefit thus provided.

THE WITHDRAWAL BENEFIT

At first sight, most employers regard it as desirable that a pension plan should involve a forfeiture of benefits in the event of resignation or dismissal, as they hope in this way to promote a greater persistency of employment and because they quite naturally feel that any employee leaving their employment has forfeited his interest in the pension fund except in so far as the employee may himself have contributed. To the extent, however, that we adhere to the deferred-wage theory, it is obvious that any forfeiture on leaving the employment is objectionable. Furthermore, the idea of forfeiture as a penalty in cases of dismissal for cause is untenable for the reason that it would only be by the merest chance that the benefit forfeited would fairly represent a measure of damages.

Under an ideal pension plan, it should, on the contrary, be feasible for an employee to go from one employer to another without the sacrifice of any of his accrued rights, each employer contributing or requiring a contribution from the employee to make provision for such portion of the pension payments as might be earned during the period of service with the employer in question. Thus a reasonable mobility of labor would be preserved, a healthy migration of workers from one industry to another, as economic requirements might demand, facilitated, and the system would be free from attack on the ground that it might be used by employers for unreasonably depressing wages, preventing strikes or for the arbitrary coercion of the wage earner.

It does not follow, however, that the withdrawal benefit need necessarily be payable in cash, especially in a lump sum payment. It should preferably take the form of a properly computed paid-up benefit or the right to continue the contract to maturity at the employee's own expense.

The Disability Benefit

The disability benefit differs from the superannuation benefit in that the number of cases of disability to be dealt with will be relatively small and that the problem is primarily one for insurance rather than for accumulation. A serious defect of most industrial pension plans is that the employee becomes eligible for a disability benefit only after a long period of service—often as long as twenty years. It is entirely practicable, however, to supply this very necessary protection at a moderate cost—even at the earliest ages, although it is advisable for various reasons to scale the benefit down somewhat at the younger ages. In fixing the scale of benefit we have as a point of departure the obvious consideration that, as the higher ages are approached, disability becomes gradually indistinguishable from incapacity arising from old age and that, therefore, at the higher ages there should be relatively little difference between the disability benefit and the old age benefit. The disability benefit should consist of two parts (1) a waiver of subsequent contributions, and (2) a disability annuity payable up to a definite age, say 65. When that age is reached, the disability annuity ceases and the superannuation benefit becomes available. A small constant percentage of the salary—about one-half of one per cent—will be sufficient to permit a satisfactory scale of disability benefit to be arranged. For the purposes of the plan, total permanent disabilities might be defined as total disabilities which had had a continuous duration of more than thirteen weeks. Disabilities under thirteen weeks duration would then be left to be provided for under whatever scheme were adopted to care for temporary sickness. In the event of recovery from "permanent" disability the employee would be restored to the active pay-roll and treated in all respects as though he had not been disabled.

Existing Employees

The question of what should be done about employees who are already approaching the pension age—in fact, all who have a number of completed years of service behind them at the time the scheme is adopted—is one which requires careful consideration. The standing of these employees as respects their past service is entirely different from the standing of employees who have been included in the scheme from the commencement of their employment. The holding out of a pension benefit was not an inducement for these men to enter the employment or to remain in it. Hence, so far as past service is concerned, they may be considered to have received full remuneration for services rendered and any pension benefit which may be granted must be in the nature of a gratuity or special reward rather than of a deferred wage. But, in spite of the fact that no provision has been made for these men in the past, it will be generally desired by the employer to make supplementary grants. These may take the form of conditional credits for the number of years of past service corresponding to the scale of superannuation benefit adopted for new employees. A special fund should be set aside to provide for the liability thus created. No special care need be taken to provide a corresponding death benefit and it is clear that no withdrawal benefit will be in order. A vitally important point in developing a logical and consistent pension plan is to make a sharp differentiation between these supplementary benefits based on a term of service in respect of which nothing has been contributed or set aside, and the regular benefits under the plan which are provided for by contributions currently set aside at the time the service is performed. Similar considerations apply to former employees now actually carried on the pension roll, although when a pension has once been granted it should be definitely guaranteed for life.

Labor Turnover

Most pension plans in actual practice rely upon the effect of the labor turnover to keep the cost of the scheme within what appears to be a reasonable percentage of the pay-roll of the establishment. In the ordinary pension fund this is done by means of the introduction into the service table of rates of discontinuance for each age. We have seen, however, that if we adopt the deferred wage hypothesis we are barred from counting on the gain from forfeitures on withdrawal as a legitimate means of reducing the cost. This does not mean, however, that the question of labor turnover is not one of the highest importance and one which must be carefully considered. Casual employees, seasonal workers, and common laborers who drift from one industry to another and rarely remain with one employer for more than a limited time, constitute a class whom it is generally desired not to include and who, in any event, are necessarily excluded from practical considerations. The rate of resignation or dismissal, although it is frequently assumed to be a function of the age, varies chiefly according to the length of service. In some establishments, especially where there are a large number of female employees, it will be found that as much as fifty per cent of the entire pay-roll is disbursed to persons who have been less than two years in service. In any event it will be found that the withdrawal rate is very heavy during the first year or two and gradually declines until, after a period of between five and ten years, it remains approximately constant at a small percentage. A serious objection to the direct use of the rate of labor turnover in actuarial calculations is the fact that it fluctuates widely according to industrial conditions, that in the same establishment it may be very high during a period of great industrial activity and correspondingly low during a period of industrial depression.

Turnover statistics are thus too mercurial in their nature to admit of legitimate use in actuarial computations and a scheme which relies for its financial soundness upon an attempt accurately to forecast the labor turnover to be experienced in the future may well be regarded with distrust. The fact, however, that the rate of labor turnover is very high during the first year or two and then decreases rapidly, suggests the desirability of excluding entirely from the operation of the pension scheme all employees who have been in the service for less than a specified period. Such a period, which may be termed a probationary period, also serves to make it unnecessary to take into account the great number of casual and migratory employees who are not likely to become members of the permanent staff. The determination of the probationary period is, therefore, an important factor in estimating the cost of the scheme when that cost is to be expressed as a percentage of the entire pay-roll. The length of the probationary period to be recommended will depend mainly upon an analysis of the labor turnover for the particular establishment. It may differ for the death benefit as distinguished from the superannuation benefit. Thus, the death benefit might carry a probationary period of one year while a period of five years might be required before starting the accumulation for the old age benefit. A plan which appears at first to be very expensive may seem much more reasonable when its cost is expressed as a percentage of the total pay-roll rather than of the pay-roll of the employees comprised within the scheme.

Salary Scale

Another subject to which we find that considerable attention is unavoidably devoted in actuarial investigations is the question of salary scale. The ordinary pension plan where the pension benefit is determined by multiplying the final salary—or the average salary for the five or ten years previous to retirement—by a certain percentage, generally one and one-half or two per cent for each year of service, depends for its mathematical accuracy upon the ability to forecast correctly a scale of average salaries which will prevail in the business for many years to come. We have only to consider the spectacular fluctuations in rates of wages which took place during the war and which are now taking place during the period of post-war readjustment to perceive the high degree of conjecture which must enter into such computations. Wages are dependent not merely upon the conditions in a single industry but upon the influence of fundamental economic forces which move in cycles over long periods and which are further influenced by minor fluctuations within those cycles. Where the contributions are levied upon wages which have been paid in a period of deflation and low wages and the pension is determined as a percentage of salaries paid during a period of inflation and high wages, the difficulty of maintaining the proper equivalence between the contributions and the benefits and of knowing whether or not the fund is solvent will be readily appreciated. Where the pension consists of the benefit actually purchasable by sums set aside out of past wages and accumulated at interest, it is clear that the financial working out of the scheme can be more readily controlled and that the equivalence between contributions and benefits is automatically maintained.

Contributory vs. Non-Contributory

The question of whether the plan should be paid for wholly by the employer or whether the employee should be called upon to contribute to the cost is one which, under the deferred wage theory, can hardly be regarded as fundamental. In the long run the cost is paid out of the aggregate wage fund and may be said to be borne wholly by the employer or wholly by the employee according to the point of view. In practice, however, this point is warmly debated and it is undoubtedly true, that, especially at the inception of a new plan, it does actually make a considerable difference which plan is adopted. Suppose, for example, that a new scheme is to be placed in operation in an existing group of employees. If the plan is paid for wholly by the employer, this is equivalent to suddenly increasing the wages of the entire staff by the percentage of contribution which is necessary under the plan. We are dealing, therefore, with a thinly disguised wage increase. Ultimately, of course, this might prevent the necessity for a direct increase in wages at a later date, or, on the other hand, during a period of depression it might pave the way for a more severe cut in direct wages than would otherwise be considered necessary. But in many salaried staffs there are persons who have reached the maximum of their efficiency and who would not in the nature of things receive further increases of salary during their term of service. Such persons would, then, receive an increase in their real remuneration were the pension to be paid for wholly or partly by the employer, which would represent in many cases a permanent gain to them.

Again, pension plans in order to be put into effect must generally first receive the approval of committees of executives or boards of directors who have little time to spare for studying the economic niceties of the question. It is much easier to secure their approval of a plan under which it is stated that a substantial part of the cost is to be borne by the employee.

The only really serious objection to a contributory plan is the difficulty of making it compulsory for existing employees. One of the requisites of a successful pension scheme is that its application shall be universal: if individuals are to be left to choose whether or not they will enter, those who will later stand in greatest need of the benefits will be apt to be the precise ones who have elected to stay out. The fact that the employer's contribution may be made contingent on an allotment to be made by the employee of a proportionate percentage of his salary, forms of course a strong incentive for the more intelligent employees to join the scheme and is the main measure to be relied on to overcome the difficulty mentioned.

A further argument frequently advanced for contributory plans is that where a part of the cost is paid by the employee himself he is more keenly appreciative of the advantages which accrue to him. It is difficult to assess correctly the merits of contentions of this type. Few subjects require so nice a balance of so large a variety of considerations and interests as does a well constructed pension scheme. Since many of the values involved are psychic rather than economic, they are liable to change as the mental attitude adopted toward the system by those affected by it develops. Of only one thing may we be certain: whatever plan be adopted, it may be predicted with confidence that it will not be wanting in adverse critics.

Our general conclusion as to the desirability of a contributory feature is that while in the long run the point may be immaterial, it may nevertheless prove a determining factor in securing the initial adoption of the plan. Where a contributory feature is unnecessary for securing the support of those on whom responsibility for the adoption of the plan rests, then it seems better to avoid the difficult question of compulsory membership and reduce administrative detail as far as possible by making the plan noncontributory. It should be noted that if the plan is to be contributory it should be made compulsory for new employees and a part of their contract of employment.

Self Insurance vs. Company Insurance

Industrial pension plans are usually administered by the employer himself. In the case of government pensions, the administration is usually vested in a special commission or pension board charged with the care of the fund and the conduct of the pension activities. The services of insurance companies in this field have been invoked but little. The typical employer's pension fund is inevitably self-insured because its actuarial structure is so defective as to make it uninsurable through any outside means.

Nearly all existing industrial pension plans are financially unsound. No insurance company could be found which would be willing to assume the liabilities promised in consideration of the funds in hand and the contributions provided. Such funds are legally solvent perhaps, but only because they reserve the right to repudiate. Furthermore, under the common form of pension plan which involves an assumption of scales of salary and where the rate of dismissal or resignation to be experienced in the future has an important effect upon the solvency of the plan, it is hardly to be expected that insurance companies could be of any assistance. Assuming, however, a properly constructed scheme in which the benefits are based upon what the contributions will purchase rather than upon the future salary to be paid and in which the accrued rights of the employee are not sacrificed on withdrawal, there would seem to be no reason why insurance companies might not be advantageously employed to undertake the service and carry the risk. Under such conditions the only elements involved in calculating the premium necessary to provide the benefits are calculations involving the rates of mortality, of disability and of interest. As soon as we exclude the necessity of taking into account hypothetical salary scales and problematical rates of labor turnover, the possibilities of putting the whole scheme on a scientific basis are greatly increased.

One of the objections likely to be raised by an employer to pensions secured through outside insurance is the fact that the rate of interest employed in computing the premium seems to him low as compared with the rate at which he is able to employ capital in his own business. It may well be asked, however, whether, when the hope of receiving a pension has been held out to the employees, it is proper that their interests should be exposed to the hazards of an industrial enterprise. The situation is analagous to that of an insurance company which might have all of its assets invested in the securities of one industrial corporation. Safety, and the certainty that pension payments due many years hence will be paid when the proper time arrives, are of far greater importance than is the ability to pay a larger benefit predicated on the success of a business speculation. The safeguards to be thrown around the financial interests of participants in a pension scheme should be no less than those which guard the beneficiaries of trusts, the policyholders in a life insurance company, or the depositors in a savings bank. It may be many years before we have a conspicuous or sensational example of a large industrial pension plan which has brought disappointment to its beneficiaries, and until that time arrives the safeguards provided by law for the protection of pensioners will presumably be lax. There would seem to be no sound reason, however, why the pension funds of industrial or commercial institutions should not be subjected to the supervision of the state authorities in the same manner as are the affairs of banks and insurance companies. Indeed, it may be noted that the recent report of the Illinois Commission on Pensions recommends that this be done.*

Pension Rights Should be Contractual

In order that the criteria which we have outlined for a satisfactory scheme may be put into practice, the first essential is that the rights of the employee should be made contractual.

*Report of Illinois Pension Laws Commission 1918-1919, page 249.

An examination of the rules governing the pension plans of most large corporations show that such rules are so formulated as to make it very clear that the obligation is not contractual. It is usual to provide that, while the right to a pension will not be defeated or denied after a pension has once been entered upon, yet with regard to all of the active employees the right is expressly reserved to amend or, if necessary, wholly to abrogate the plan at any time at the option of the employer. Where there is a contributory feature, it is of course provided that the contributions with interest will be returned in the event of the discontinuance of the plan. Reverting to our fundamental concept of a pension as a form of deferred wages, it is at once apparent how serious is the objection to such a scheme. We can hardly expect the plan to bring about the results expected of it when it may be arbitrarily discontinued at the convenience of the employer. The ability of the employee to face the future without worry over pecuniary matters is the principal reason given for the betterment of morale which is expected to be brought about, and yet, under a scheme of this kind, while the employee's uncertainty as to the future may be lessened, it is far from being effectively removed.

There seems no escape from the conclusion that someone should be legally bound to pay the pension in order to secure which the employee has foregone a part of his remuneration. The contract may be either with the employer direct or it may be with an insurance company which has undertaken to guarantee the plan. In either event the first desideratum is safety.

Safeguarding the Employee's Interest

Where the plan is contractual and the right to pension benefits is evidenced to the employee by an individual contract, of which he is the sole owner and over which he exerts a large measure of control, it is important, if the whole purpose of the plan is not in some instances to be defeated, to safeguard the interest of the employee by making it difficult or impossible for him to deal with the contract in a spendthrift manner. It is true that measures to protect persons against the results of their own improvidence or bad judgment have never been popular because they appear to contravene the natural right of an individual to do what he pleases with that which belongs to him. Other persons than the employee, however, are interested in the pension contract. The employer is entitled to an arrangement under which he need have no fear that his carefully devised plan will come to naught because of the spendthrift action of its chief beneficiary. Society in general is interested in making certain that the benefits of the contract shall not be prematurely diverted. The family of the employee has a right to feel that its pecuniary responsibility for his old age has been definitely lessened.

This safeguarding of the contract against improvident action should not, of course, be confused with the forfeiture of any accrued rights thereunder. It means simply that in the event of discontinuance the surrender value should take the form of a paid-up annuity, and that in the event of death between the date of lapse and the date of commencement of the pension, the full reserve value should be paid as a death benefit. During the first few years of the contract, however, these paid-up options will amount to relatively little so that it would perhaps be better to provide that up to about the fifth year the surrender value will be paid in cash, such payments, however, to be made in twelve equal monthly instalments and to be unassignable and non-commutable. There should also be a provision enabling the employee to continue the contract to maturity on his own initiative. It will be understood, of course, that the insurance company, if the plan is insured in a company, gains nothing by such an arrangement since the cost may be presumed to be the same whether the contract is continued as a paid-up contract or whether it is surrendered for its cash value.

Advantages of a Retirement System

The advantages of such a retirement system as has been described are three-fold. It benefits the employee, the employer and the community.

To the employee its value is immeasurable. It frees him from fear of a penniless old age, of premature death, and of permanently disabling sickness. It makes thrift easy because it makes it compulsory.

The employer, however, necessarily looks upon a pension scheme as a business proposition. It is not his affair to correct the defects of human nature or remedy social shortcomings except in so far as his efforts are warranted by the increased efficiency of his staff. For him the retirement system accomplishes the following:

(a) It eliminates the cost of continuing on the pay-roll employees who are no longer active and who are therefore receiving, in the absence of any systematic plan, what in effect constitute disguised pensions.

(b) It enables him to get rid of inefficient employees whom he might otherwise hesitate to discharge.

(c) It decreases his rate of labor turnover.

(d) It serves to attract to his employ thrifty and far-sighted men and to repel the more improvident who wish to be able to consume their entire income as it is earned.

(e) It lessens unrest.

(f) It makes certain, if soundly constructed, that the cost of superannuation is assessed against the product at the time when it is incurred.

The community as a whole is an obvious gainer from such an arrangement. For any extensive adoption of pension plans by large employers must serve to lessen materially the necessary amount of poor relief to be provided. The feeling of individual and family security which tended to exist when men lived in small communities, when the employer had a personal interest in each employee, when families grew up without being split into widely dispersed individuals, will under such a plan be in some measure restored.

It is not to be expected, however, that the full measure of these advantages will accrue from the adoption of a half-hearted and insecure plan. It will therefore be well to recapitulate very briefly the essentials of a system which is to be sound from the social, the economic and the actuarial points of view.

Those essentials are:

(1) It must be financially secure. It should not be dependent on the continued solvency and good intentions of the employer.

(2) It must be equitable. A definite known amount should be set aside from the wages of each employee and the benefits which he receives should be for each individual—not merely for the plan as a whole—the actuarial equivalent of the contributions.

(3) It must be contractual. Every employee should have a definite written contract showing what benefits he will receive if he dies, becomes disabled or leaves the employment, as well as what benefits are guaranteed to him on reaching the age for retirement. By watching the value of his contract grow from year to year he comes to regard it as part of his wages.