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Pensions

A. In view of the fact that trust-fund pension plans frequently provide disability retirement benefits (without actuarial reduction), to what extent has the group annuity industry moved towards underwriting disability retirements?

B. What are the advantages of funding deferred profit sharing plans through the medium of a life insurance company, and the relative advantages and disadvantages of funding such plans with (*a*) Ordinary contracts and (*b*) Group contracts?

C. What problems are involved in "final average" retirement plans? What controls or substitutes are available? Under plans which are not "final average" what steps, if any, have been taken in recent years to revise or supplement the plans in view of the substantial increase in the cost of living index and in salary in recent years?

Atlanta Regional Meeting

MR. EDWARD F. O'DONNELL, in discussing section A, stated that Massachusetts Mutual is currently offering disability benefits on deferred group annuities only with actuarial reduction. Benefits without actuarial reduction are available with deposit administration plans and group annuity plans with an active life fund for purchase of past service benefits. The benefits are paid directly from the fund and the insurer assumes no risk. At normal retirement date an annuity is purchased by a withdrawal from the fund and the benefits are then guaranteed. An alternate method is the purchase of a temporary annuity from date of disability to normal retirement date. The purchase rates for the temporary annuity are based on standard lives to avoid antiselection problems and may appear redundant to the policyholder.

MR. LOREN G. LOGAN noted that Continental Assurance's disability procedures flow from the fact that practically all of their group annuity contracts are of the deposit administration type. Many of these plans provide monthly retirement incomes on permanent disability. These disability benefits have been a minor financial problem, and the practice of his company is not to accept the disability risk but to provide the monthly income in the manner most acceptable to the employer. In most instances the disability payments are made directly from the fund with only a nominal service charge.

MR. THOMAS P. BOWLES, JR. commented that one of the gaps in most employee benefit programs is an adequate long-term disability income benefit, particularly for executives. He felt that insurance companies could face this need more realistically by, for example, removing the inconsistency of offering a lifetime accident and a five-year sickness benefit.

He commented that the need is equally great whether the disability arises from illness or from accident.

MR. CHARLES L. TROWBRIDGE commented that the discussion implied that group writing companies do not sell insured long-term disability benefits. He pointed out that his company, Bankers Life, and some other companies offer long-term disability benefits under group insurance contracts to employers who are willing to relinquish control over determination of disability.

MR. J. DARRISON SILLESKY remarked that the critical problem in underwriting a guaranteed disability benefit is that the insurance company must make the determination of disability, whereas the employer often wants to make this decision as a means of retiring persons whose business effectiveness has declined even though they are not clearly disabled.

MR. HARWOOD ROSSER cautioned that plans which provide disability benefits without reduction may have a disability benefit larger than the early retirement benefit and many early retirements will be classified as disability claims.

MR. GEORGE F. M. MAYO summarized a contract offered by one English company. A full disability retirement annuity was provided and also an early retirement annuity. The election of disability retirement was always with the consent of the employer, and was at his entire discretion. The method of funding these benefits, known in England as indefinite funding, required each year a premium which, if paid over 20 years, would provide benefits for all people expected to retire within the 20 years. There would be adjustments for participation and for a higher and earlier disability retirement. The premiums were not specifically allotted to any employee, but used as needed to buy a retirement annuity. The annuity premium rates assumed healthy lives, having allowance for the actual age; there was no participation once the employee retired.

MR. TROWBRIDGE, addressing to section B, expressed the view that a life insurance company should stay out of deferred profit sharing plans unless it can perform, better than competing arrangements, some function important to such plans.

Two functions that clearly meet this test are:

1. The life insurance company can provide lifetime incomes to those who reach retirement and estate values substantially in excess of the profit shares for those who die before retirement.
2. The life insurance company can make available its facilities for fixed dollar investments, with guarantees as to safety of principal and a minimum interest return.

The type of contract typically employed depends on whether insurance

features are desired in event of death prior to retirement, and to some extent on whether a group or an ordinary approach is employed.

If no insurance is desired, Bankers Life considers the most appropriate contract to be an allocated deposit administration group annuity contract under which each individual's profit shares are accumulated until retirement, then applied to purchase an annuity. Sometimes only a part of the funds are invested under this contract, the remainder being invested by a corporate trustee. In such cases the insurance company contract may provide the distribution system for the equity investment as well, by permitting purchase of additional annuity at retirement.

If insurance features before retirement are attractive a group whole life contract can be the vehicle for the death benefits. Other funds can be invested outside the insurance company, or through the profit sharing group annuity previously described. At retirement the whole life values are converted to annuity, and machinery can be provided for the distribution of outside funds as annuities.

Mr. Trowbridge concluded that Bankers Life Company believes the group approach is nearly always better than the use of individual policies. The group contract should prove to give greater benefits for the same dollars invested, it can provide insurance on a no-evidence basis, and it can be better tailor-made to the specific situation.

MR. ROBERT A. BACON stated that the advantages of funding deferred profit sharing plans through the medium of individual life insurance policies include:

1) the increased death benefits which may be provided the participants,
2) the guarantee of annuity rates,
3) the administrative assistance provided by insurance companies,
4) the investment of a portion of assets with the insurance company which offers stability particularly attractive to small business and permits more aggressive investment of funds not held by the insurer, and
5) the tax advantages on death under Section 101a of the 1954 Internal Revenue Code.

In conclusion, Mr. Bacon felt that use of individual policies in this field has proved most satisfactory, especially with smaller businesses.

MR. BOWLES added that investing a deferred profit sharing plan in insurance contracts is good if additional death benefits are needed to give a well integrated and a well coordinated program of employee benefits. In some cases a profit sharing plan has been established just to provide a vehicle for purchasing insurance and without a careful analysis of the true needs.

MR. WILLIAM W. FELLERS, discussing section C, noted that the problems associated with a "final average" type of retirement plan, providing pension benefits based on the average earnings over a period of time, usually five or ten years, prior to retirement, include:

1) the indeterminate nature of final average salaries, the benefits based thereon and the costs of such benefits,
2) the selection of the funding medium, and
3) the Internal Revenue Service regulations concerning integration with social security benefits where a "bent formula" is used.

The first problem can be reduced through the use of a percentage of payroll as a cost index (rather than dollars), the use of a salary scale to estimate the final average earnings, and the extension or reduction in the funding period for past service to stabilize costs.

Some steps taken in recent years to revise or supplement plans are:

1) to increase past service benefits by changing the formula percentages and/or changing the earnings base to reflect more current earnings levels,
2) to add a minimum benefit based on final average pay.

MR. CLARENCE H. TOOKEY remarked that, effective January 1, 1955, the Occidental retirement plan was amended to provide a minimum benefit.

The base plan provides an annual benefit credit of $1\frac{1}{4}\%$ on the first $300 of monthly salary and $2\frac{1}{4}\%$ on the excess. The minimum benefit is based on the average salary for the last five years of service and allows $1\frac{1}{4}\%$ of this salary for each year of service. However, the minimum benefit may not exceed 50% of the final average salary less social security primary benefits and does not apply to early retirements.

They are considering making the minimum benefit effective for early retirements and have investigated the cost of using a 2% credit for a maximum of twenty-five years of service. This latter amendment would result in a very substantial increase in cost.

While the final average formulas protect the employee against inflation, it is very difficult to control the cost or to determine a proper premium. The Occidental treats the value of excess benefits based on present salaries of employees 50 or more years old as a past service liability. As long as inflation is of the creeping degree, this method seems satisfactory, but for sudden inflation, such as seems to follow every war, it does not make adequate provision for prefunding.

MR. WILLIAM A. DREHER discussed two weaknesses of the final average retirement plan, namely, (*a*) a final average retirement plan does not take direct account of cost of living increases after retirement, and

(*b*) a final average retirement plan obligates the employer to a volatile financial commitment.

A final average plan intends to provide the pensioner a reasonable and adequate retirement income, reflecting the purchasing power of money at his retirement. Subsequent economic inflation upsets the balance, however. One possible means of adjusting the pension to preserve its purchasing power would be to make the benefit changes dependent on changes in social security laws. This is practical since social security benefit increases have, by and large, kept pace with the cost of living index. Assuming that these periodic social security benefit increases will continue, a program, either formal or informal, of supplements to the final average benefit of retired employees could be adopted. The supplements could be related directly to the proportionate increase in the maximum social security primary benefit or tied to another appropriate index.

The value of additional benefits may be approximated, if the increase in the cost of living index is a geometric function, by the integral

$$B_z \int_0^\infty \left\{ (1+j)^t - 1 \right\} v^t {}_tp_z \, dt ,$$

where

B_z equals the final average benefit computed at retirement age z,
j equals the annual rate of increase in the cost of living index,
i equals the valuation interest rate.
If i equals j this continuous function reduces to $B_z(\mathring{e}_z - \bar{a}_z)$.

The table below compares the complete life expectation and a monthly life annuity due, using values drawn from Mr. Peterson's paper, "Group Annuity Mortality" (*TSA* IV, 246). Annuity values are based on the 1951 Group Annuity Mortality Table with projection Scale C and $2\frac{1}{2}\%$ interest; j, the annual increase in the cost of living index, is assumed to be $2\frac{1}{2}\%$.

Relating these additional costs, approximately 27% for males and 30% for females, to the cost of maintaining the basic final average plan and as-

Year of Retirement at Age 65	Males			Females		
	$\mathring{e}_{65}$ (in yrs.)	$\ddot{a}^{(12)}_{65}$	$\frac{(1)-(2)}{(2)}$	$\mathring{e}_{65}$ (in yrs.)	$\ddot{a}^{(12)}_{65}$	$\frac{(4)-(5)}{(5)}$
	(1)	(2)	(3)	(4)	(5)	(6)
1952....	14.79	11.79	25.4%	17.68	13.72	28.9%
1972....	16.08	12.68	26.8	18.79	14.45	30.0
1992....	17.27	13.48	28.1	19.79	15.10	31.1

suming an annual contribution of 10% of payroll, one might expect the program of cost-of-living supplements to increase the contribution to 13% of payroll.

The second major weakness of the final average plan is the uncertainty surrounding the cost of benefits. The employer is handicapped because

a) he has small control over the ultimate cost of the retirement plan;
b) he has no knowledge of the extent and effect of future changes in social security laws;
c) a reasonable and proper actuarial valuation may be quite wide of the mark and he may be unable to pay the resulting higher cost without severely impairing the operation of his business; and
d) an investment in common stocks as a "hedge against inflation" may be unsuccessful and assets may drop in value without any reduction in the contingent liabilities of the retirement plan.

Despite these unknowns the design of the retirement plan is fixed and benefit levels cannot be reduced without proving "business necessity" to the Internal Revenue Service.

Mr. Dreher felt that the employer concerned about these contingencies would be advised to adopt a career average benefit formula with the intention of updating the benefits from time to time. For employees retiring during the first 5 to 10 years, the benefits under such a plan would be nearly identical with those under a final average plan. If the initial past service benefits were based on the average earnings during the 5 or 10 years before the effective date and any changes in the benefit formula were geared to the average earnings during the same number of years immediately prior to the date of subsequent plan amendments, the plan would always provide suitable final average benefits for employees retiring in the immediate future.

The long-term cost of this scheme could be stabilized if actuarial liabilities were computed by conservative standards, if the initial past service contributions were well above minimum, and if the past service amortization period were redetermined at each amendment date.

San Francisco Regional Meeting

MR. WALTER L. REYNOLDS commented that retirement plan disability benefits were nothing new. Originally on deferred annuity plans a temporary annuity from disability date to retirement date was provided on a premium risk basis. The temporary annuity amount was equal to accrued benefits at date of disability. Subsequently deposit administration arrangements have taken care of the problem to good advantage.

He noted a current revived interest in disability benefits, presumably because of social security expansion into this field. He called attention to

two divergent approaches to the problem: the insurance approach and the annuity approach. The insurance (risk premium) approach places disability on a welfare basis arrangement and gives little or no consideration to the insured's age, years of service, etc. Under this arrangement the insurer determines disability which may or may not coincide with the employer's ideas. The annuity approach is more readily adaptable to providing benefits which recognize age, years of service, etc., so that the faithful employee with many years service can be taken care of to maximum advantage. In addition, where this benefit is on a deposit administration basis, the employer can make the disability determination which in many instances is what is wanted, especially when the employer finds disability to be inefficiency because of advancing age.

MR. JOHN L. HOFFART commented that disability benefits were sparingly used until recent years. Three instances were cited where disability benefits were provided many years ago, the benefit being $50 per month commencing 20 months after disability date and continuing until age 65. These were on a risk premium basis and experience has been satisfactory. More recently, disability benefits have been requested on about 50% of the union cases and 20% of the employer cases.

He further commented on the procedure used by Occidental Life in making disability payments directly out of the deposit administration fund without the formality of purchasing a temporary annuity. This method avoids the payment of premium tax, except that the Illinois Department is now questioning the validity of this procedure. A further point mentioned was the retiree's tax status. When a retirement plan contains no specific disability provision, all retirement payments are taxable; but when payments are made pursuant to a disability provision, then the customary $100 per week exclusion can be used.

MR. BLACKBURN H. HAZLEHURST remarked on section B that where employers adopt profit sharing plans as substitutes for retirement plans, the facilities of an insurance company are very helpful in providing for security of principal and guarantee of benefits.

The use of individual policies in insured plans has the advantage of increased flexibility in policy settlements for higher paid personnel, the complete allocation by individual, and the facility of original age conversion at termination of employment. These advantages are partially offset where graded premium rates are used, since the higher expense ratio for small unit increases can become an appreciable burden.

The advantages of group type policies in connection with profit sharing are material in permitting lower acquisition and administrative costs while enabling greater over-all flexibility in funding.

MR. PAUL T. HARKNESS reviewed a discussion presented by Mr. Robert A. Bacon at the Atlantic regional meeting.

MR. BARRETT N. COATES, JR. opened the discussion of section C by pointing out the main difficulty of final-average pay plans, that of predicting the final averages of pay through the use of salary scales.

One control suggested to prevent too great an increase in final-average plans' costs is a maximum on salaries, the effectiveness of which depends upon its relation to salaries as a whole; the difficulty arises in adhering to the maximum. Another control is to use a full social security offset on the assumption that the inflation which increases average salaries will also increase the offset.

He suggested, as did MR. WILLIAM F. MARPLES, that a good method of controlling costs while having, in effect, a final-average pay plan is to adopt a career-average plan under which the past service benefit is based on the five-year average prior to the effective date. Then, as necessary to reflect inflation and providing that the employer feels that he can afford it, the plan is revised periodically to use a more recent five-year average as the base for pensions earned prior to the date of amendment. The result of such a procedure is to provide pensions related to recent earnings, as in final-average plans, but not to force the employer to underwrite possibly large future increases in costs.

MR. MARPLES discussed measures for allowing for increases in the cost of living after retirement. The first alternative is a supplementary allowance paid directly by the employer; its drawbacks are that a time lag develops before the need is recognized, that the employer must be able to pay the necessary amounts, and that there is no assurance that the allowances will continue.

The second method is to incorporate into the plan a formula which directly reflects the cost of living index, using a corridor to minimize the effect of small fluctuations. Because of the uncertainty of the burden to be assumed, not too many employers may be willing to install such plans.

The third method suggested is the variable annuity method pioneered by TIAA-CREF, under which success depends upon the continuation in the future of past trends in the stock market. One difficulty may lie in the understanding that employees have of the operation of the plan; if the equity portion of employees' pensions should provide less than expected, dissatisfaction might arise, forcing the employer to step into the breech and provide in substance a guarantee that the equity benefits will equal the fixed benefits.

MR. JAMES A. ATTWOOD pointed out that final pay plans are designed not only to cope with inflation, but to provide relatively more lib-

eral pensions to employees who progress rapidly in a company, so that final average pay eliminates pay which is low not only because of pre-inflation rates but because of service in less responsible positions.

Final pay and even career average retirement plans have automatic benefit and cost increases with inflation. In collective bargaining this feature is detrimental to employers because, if the increases were not automatic, then any increases would have to be negotiated, perhaps being granted in lieu of equivalent cash wage increases.

The effect of a full social security offset as a control for final average pay plans has been decreased considerably by the practice of instituting minimums.

While the use of equity funding is a good hedge against inflationary cost increases in final average pay plans, some employers, by funding on a minimum basis, have overlooked the necessity of getting enough money invested to use this hedge properly.

In his opinion, the requirement of employee contributions in final average pay plans introduces inequities.

In final average pay plans it is difficult to meet the problem of increases in the cost of living after retirement through a variable benefit plan depending upon the market value of equity investments. Dollar-averaging over a period of time is not available and fluctuations after retirement are confined to too short a time to expect the necessary correlation between market values and cost of living to exist. One possible solution is to relate the benefits after retirement to average wages.