

RECORD OF SOCIETY OF ACTUARIES 1977 VOL. 3 NO. 3

PENSION PLAN DYNAMICS

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MS. MARY S. RIEBOLD: The common denominator of several of the current developments in integration is a rebuttal of integration's basic premise. This basic premise is that the value of Social Security benefits can best be measured by the employer's contribution toward the system.

This position certainly was palatable and not unreasonable when it was adopted in the 1940's. At that time, the concept of tax-qualified pension plans - with their required nondiscrimination - was new. The primary purpose of the original integration rules was to permit a qualified plan to provide "equitable" pensions to high-salaried employees.

The method by which Revenue Ruling 71-446 (the current guideline) justifies such higher pensions is as follows. This approach - and its resulting limits on integration has been largely unaltered since the 1940's.

1. The ratio of the maximum primary insurance amount in 1971 to the maximum average monthly wage was computed for that year, as was a similar ratio for the year 2010 (forty years later). The two were averaged, arriving at a result of 43%. This percentage was taken to be "the rate at which the maximum monthly old-age insurance benefit is provided under the Social Security Act."
2. The value of all OASDI benefits was deemed to be 162% of the value of primary old-age benefits alone, so that the value of all Social Security benefits in proportion to maximum average monthly wage was considered to be 162% of 43%, or 70%.
3. One-half of Social Security benefits were deemed to be paid for by the employee, so that the employer-paid portion was taken as 35% of maximum average monthly wage in any given year. They then rounded this figure up to 37.5% so as to anticipate future increases in Social Security. In other words, a plan can provide a benefit of

up to 37.5% of earnings in excess of the average covered compensation without engaging in prohibited discrimination in favor of highly-paid employees.

Much has changed since the 1940's, however, which indicates that the employer cost of Social Security is no longer a valid yardstick for assuring equity. These changes all seem to point toward Social Security benefits themselves as the preferable measure.

1. The first, and most obvious, difference is the current level of Social Security benefits. The replacement ratio for the average retiree through the late 1960's hovered around 30% of final pay. (The most apparent aberration in this measure was its predictable peak prior to election years, followed by a gradual lowering in the next 4 years.) From 1969 to today, this average has increased to over 40%; and we have all heard the dire warnings about where it is going from here. This current situation has created a new purpose for utilizing integration - to create generational equity as well as earnings equity in pension benefits. In such an environment, the focus shifts to benefit levels - primarily the avoidance of over-adequate retirement income - in evaluating the usefulness of an integrated plan.
2. The current contribution levels associated with Social Security have become increasingly less reliable as an indicator of the long range cost of providing the promised benefits. The arising actuarial deficiencies need no further emphasis here.
3. Even if current Social Security contributions would be adequate on a long range basis, they still may not be our best measure since they now must provide for so many more "ancillary benefits" under the Act than they did initially. These benefits are irrelevant when considering the proper integration of retirement pensions.
4. On the other hand, many changes have occurred in the private pension system which also point toward an evaluation of benefits. The benefit levels of private pensions have escalated substantially since the 1940's; thus, it is imperative to be able to recognize the existence of Social Security benefits in the total retirement income in order to define a proper benefit objective. To illustrate this point, a plan with a benefit objective of 10% of final earnings has no need to integrate; while one with a 100% total objective cannot imagine ignoring Social Security. There is indeed some beauty, and quite a bit of logic as well, in permitting integration up to the benefit objective level. For example, allow 10% recognition of Social Security benefits for a private plan which has a 10% objective, 20% recognition for a plan with a 20% objective, and so on.
5. Likewise, employers' fringe and pension costs have increased, so that the ability to adopt such reasonable benefit objectives is imperative for the continuation of the private system.
6. Finally, the current trend - and even legislative directive - toward considering employees' needs and rights forces us to focus upon benefit levels. A militant labor force is demanding pension increases; equal rights requirements have focused upon equal

benefits, without regard to their unequal costs; and so on. ERISA has merely reinforced what we have always understood: that the purpose of a pension plan is to pay pension benefits to participants.

Thus, in the light of all these changes a clamor to revise the integration standards was inevitable. I intend to review briefly five current proposals, all of which have the common premise that any such guidelines should be formulated by a focus on Social Security benefits rather than costs. These five proposals are:

1. The paper by Arthur Anderson.
2. The CAP.
3. The Salary-Graded CAP, a type of 100% Offset Plan.
4. A complete prohibition of integrated plans, such as appeared in ERISA, Section 1021(g).
5. The Carter Proposals.

1. The Anderson Paper

The Anderson technique involves a determination of Social Security replacement ratios for employees at various earnings levels. Under assumptions of 6% annual increases in the taxable wage base and 4% annual increase in the Consumer Price Index, he found little variation by year of retirement up to 1995 (his study period). Fitting a least-squares line to these replacement ratios, a single-variable formula was determined relating the Social Security replacement ratio to 1976 earnings. Next, a plan's own retirement benefits (and replacement ratios) are related in a similar formula to 1976 earnings. By summing these two formulas, we obtain a formula for the total replacement ratio.

Philosophically, then, if benefits are not to be tilted in favor of highly paid employees, integration should be permitted in such a fashion that the total replacement (from the plan combined with Social Security) is not an increasing function with respect to earnings. Mathematically, this is assured if the total replacement formula is a strictly nonincreasing function of earnings.

Some very intriguing results follow from the manipulations of this formula - to repeat, all based upon the new focus on benefits provided:

A. Defined Contribution Plans

The contribution rate on earnings in excess of the wage base may be as high as 7.3% (currently 7.0%).

B. Defined Benefit Plans

(1) Basic Limitations

(a) Offset Formula

The maximum offset at normal retirement date would be 100% (currently 83-1/3%) of the Social Security Primary Insurance Amount. If no old-age benefit is payable at normal retirement age, the application of the offset must be delayed until it is payable.

(b) Excess Formula

The limitation depends on whether the formula is applied to career average pay or to final average pay.

- (i) Final Pay Plans - The maximum benefit rate is 30.6% (currently 17.2%) of the excess of final pay over the final wage base.
- (ii) Career Pay Plans - The maximum benefit rate is 1.8% (currently 1.4%) of the excess of current pay over the current wage base.

These results are not too startling. They do permit greater recognition of the Social Security benefits in all cases. But it is also important to note that the type of plan which would benefit the most is the final pay excess plan. Perhaps this current situation is what has caused offset plans to become so popular.

(2) Adjustment to Basic Limitations

These basic limitations would apply universally, except for normal retirement age different from 65 and for subsidized early retirement. Plan provisions concerning preretirement and postretirement death benefits are dismissed - by definition - as being too incidental to affect integration. Other factors have no effect whatever upon the benefit replacement ratios and, therefore, also require no adjustment: plan provisions concerning employee contributions, final pay averaging period, Social Security law used in offset plans and COL adjustments. All very tidy! (Although at least one of these - employee contribution - is a little hard to accept.)

2. The CAP

The CAP is a maximum benefit override which was introduced in the Can and Aluminum industries in the 1974-75 negotiations. It is also included in the new Steelworker package on a service-graded basis with adjustment for early retirement. The CAP causes the pension plan benefit to be reduced if the pension plan benefit plus the primary Social Security is too high in relation to final annual salary. In its simplest form, the test compares the pension plan benefit plus 100% of the primary Social Security benefit against 85% of final average salary. If the combination is higher than 85%, the pension plan benefit is reduced.

The IRS, as most of you probably know, has not officially addressed this issue yet, although some such plans have been qualified. They have undoubtedly received many good arguments as to why they should sanction the concept even though the offset technically exceeds the 83-1/3% in Revenue Ruling 71-446. The fact that no retiring employee has yet been affected by the CAP - and the unions will surely endeavor to ensure that no one ever does - has undoubtedly affected the outcome.

3. The Salary-Graded CAP, or 100% Offset Plan

This type of formula - and it is usually a formula rather than an overriding maximum as the CAP - appears to violate Revenue Ruling 71-446, but it actually does not. It is utilized typically in salaried plans and is constructed as follows:

Take a typical 50% offset plan, such as 50% of final average pay less half of Social Security, and make a chart. In one column you will put final average pay levels of \$500, \$1,000, \$1,500 and so forth. Next, calculate the benefit from the 50% of pay less half Social Security offset plan. Then express that benefit as a percent of pay for each one of those levels of final average pay. Next add all of the Social Security back into the benefit so that you have a total retirement income level (i.e., the guaranteed percentages) for the two plans. Then, you discard the two middle calculation columns and put a table in the plan document that simply has one column containing final average pay, and another column that has guaranteed percentages utilizing 100% Social Security. Those guaranteed percentages typically might range downwards from 80% of pay for low salaries to 50% of pay for high salaries.

Technically, this plan contains a 100% offset and, therefore, does not qualify under Revenue Ruling 71-446. But, since you do have a graded benefit schedule, and that schedule was generated by using a formula that easily integrates, you can then produce a proof of integration for the IRS which shows that you can reproduce the same exact benefit levels under a formula which the IRS says does integrate. In the proof of integration, however, you must stipulate that the proof is based on today's Social Security levels. If you stipulate that, the IRS might and sometimes does give an approval letter today but require an annual redetermination to assure that the plan still integrates with the next year's Social Security benefits. However, the IRS has also been known to give such plans unconditional letters.

The two primary characteristics of these plans, and the reason requalification is sometimes required, are: that the sponsor receives full credit for Social Security increases, instead of only half as under a 50% offset plan; and that the pay levels utilized in the formula become outdated over time. As inflation pushes up a participant's final salary, his guaranteed benefit level will decrease unless the plan is periodically updated. This is reminiscent of the career-average concept where continual upgrading was required and introduces a lot of the same funding problems and apparent attendant lower cost.

4. A Prohibition on Integration (with or without grandfathering)

This prospect is one that we were able to banish once, but that continues to lurk in the background. I suspect that its spectre is one of the reasons most of us have not urged harder for revision of Revenue Ruling 71-446.

5. The Carter Proposals

The financing features (removing the taxable wage base limit on employer contributions) could freeze the integration of every plan

under the philosophy of Revenue Ruling 71-446. One view could be that the employer contribution would now be at an identical rate at all earnings levels, and the current rationale for integration would be eliminated entirely. The alternate, and more theoretically appropriate, conclusion could be that the employer would indeed contribute more, but that these extra funds are directed entirely toward providing benefits below the taxable wage base.

The future of these and other proposals is nothing if not unclear. Undoubtedly, the passage of ERISA and its attendant workload delayed any IRS review of the current integration rulings. The uncertainty of the future direction of Social Security itself, and the proposed Carter remedies, will probably give the project even lower priorities. There is only further discouragement in considering the sad state of neglect of the Railroad Retirement integration rules, which are far more outdated than Revenue Ruling 71-446.

The present situation appears to call for patience; for creativity, as evidenced by Mr. Anderson and the originators and proponents of the CAP and the 100% Offset Plans; and for whatever persuasion we can exert to maintain the existence of an integrated pension system.

MR. NORMAN W. CLAUSEN: I am a little bit concerned that many of the arguments for maintaining integration focus on the fact that the higher paid employee in a typical salary plan needs a relatively higher benefit in order for him to have the same standard of living after retirement. I think that is appropriate, but Congress could very easily answer that problem by prohibiting integrated plans and allowing excess benefit plans only on a non-qualified basis.

For example, if Social Security represents 40% of a lower paid employee's pay and, if the objective is total retirement income of 80% of pay, the qualified pension plan would provide 40% of pay on a nonintegrated basis. This provides a perfectly adequate pension for a lower paid employee. For a higher paid employee, the Social Security benefit is meaningless. A second nonfunded, nonqualified plan would provide the extra 40% of pay in excess of the Social Security wage base.

Looking at it this way, the whole question of integration as far as I am concerned is whether or not that second plan ought to receive favorable tax treatment. The argument ought to be focused on this point.

I would like to make another comment. If integrated plans continue to be permitted, I would like to see a revision in Revenue Ruling 71-446 that would permit an offset plan to base an offset on the maximum Social Security benefit that could be payable rather than the employee's actual Social Security benefit. This is exactly what is done in a step-rate plan. It would save the nation quite a bit in administrative expense if offset plans could base benefits on the maximum Social Security benefit.

MS. RIEBOLD: There is a trend in Social Security to narrow the gap between what most people get and the maximum. This is certainly an indication that that may not be as inappropriate as it may have once sounded.

MR. WILLIAM F. LUMSDEN: In some ways, I am a cynic. I hear these noises coming out of Congress and I do not think we are waiting for a rewrite of Revenue Ruling 71-446. We are waiting for the other shoe to fall in connection with thou shall not have integrated plans in the future.

The subject I am going to discuss -- benefits statement -- is going to be an added fuel to the fire. Accrued benefit statements will be going out under offset plans which indicate reduction from year-to-year in accrued benefits because of Social Security benefit increases. That kind of thing is going to add questions.

We do not have any one strong person in Congress running things through like Mills. Democracy may take over again instead of autocracy. When democracy comes along, the logic of integrated plans, however much we appreciate it, may go out the window. I am afraid that we had better watch out for Congress, not for Internal Revenue. Internal Revenue is reasonably logical. But Congress, God knows what happens with them.

MR. STANLEY R. FREILICH: I would like to thank Mary for giving the Salary-graded CAP, as she called it, a name. It is an approach I am finding increasingly interesting to my clients and we have not had a good name for it before.

Mary is quite right, of course, that the real value of the benefit provided under such a formula does decline as we have inflation. Those \$500, \$1,000 or \$1,500 levels that she mentioned become smaller and smaller percentages of employees' total earnings. One approach that we have used to counteract that in an automatic way is to design those breakpoints to move with some index, usually the Social Security wage base. The breakpoints can be made a function of the wage base.

Also, in pricing such plans, we have made assumptions as to the growth in those breakpoints, in an attempt to get a realistic pricing of a plan of that sort recognizing that the breakpoints will be moved upwards at least periodically.

MR. LUMSDEN: Providing a participant with a statement of his projected benefits at retirement has received added impetus in recent years for a number of reasons. Probably the most important is improved personnel practices which recognize the positive benefit which can be obtained by telling an employee well ahead of time what pension he may expect to receive at retirement. Management realizes the large number of fringe benefit dollars that are being spent and finds that the best way of receiving credit for these dollars from their employees is to tell them not only about the benefits they can expect to receive on disability in the form of health, short-term and long-term loss of time benefits but also the benefits which may be payable to their dependents on their death and the rewards they may expect to receive at retirement for long and devoted service.

With the arrival of ERISA, whatever doubts we may have had in the past, it is now apparent that pensions are deferred compensation and the employer has an obligation, on demand, to tell his employee the amount of benefit accrued to date, whether it is vested, and if not, when it will be vested in the future. Since this is a natural adjunct of a benefit projection program, if the employer is in the habit of putting out a projected benefit statement annually, it would appear logical from the employee's standpoint that the accrued benefit should also be shown on the statement. It could well be that the employer does not wish to show the accrued benefit voluntarily, especially if, because of a rapid increase in Social Security since the previous statement, and notwithstanding the employee's increase in salary, the increase in accrued benefit is minimal. In such a case, the projected benefit statement could contain

a reference to the availability of the amount of the accrued benefit.

In the past, in determining projected benefits for employee benefit statements, the general assumption was status quo; that is, it was assumed that salaries would not increase in the future, Social Security would continue to be determined on the current tables in effect assuming constant salary in the future and employees would retire at the normal retirement age even though there might be provisions in the plan providing incentives for earlier retirement. The only exception to this status quo assumption is that in determining Social Security, since data are not usually available on employee's covered wages for years in the past, an arbitrary assumption has usually been made that salaries have increased in the past at a modest rate, such as 3% per year.

The subject under discussion today is to what extent dynamic assumptions can or should be used in producing projected benefit statements in the future.

Most actuarial valuation programs produce projected benefits using dynamic assumptions and some programs produce a listing of the projected benefits as a by-product which may or may not be given to the employer. If they are transmitted, an adequate and complete explanation is given of how the projections were made. Also, at the time a benefit program is revised, it is usual to present the decision-makers in management with examples, not only of typical employees but of specific employees, showing what might be expected to happen under the changed program under one or more than one sets of assumptions.

In such situations, the employer representative can be considered to be a sophisticated reader who is accustomed to having actuarial assumptions explained to him and is receiving a series of projections which are bound into a report containing the implied assumptions and which, we hope, are unlikely to be subject to future misunderstanding.

As we all know, the danger in giving projected benefits to individual participants is that, even though we couch the explanation in the most easily understandable words and phrases available, there is not only the possibility but the probability that they will be misunderstood. Any further expansion of the words on the benefit statement will probably be muddled because it will be given by a supervisor or a fellow employee rather than by a member of the Personnel Department who has been trained to answer questions.

Because of the possibility of misunderstanding, the probability that any projections will appear in union negotiations and also because the benefit statement may be used as a basis for a future legal suit by the employee, his widow or his heirs, employers are very loath to use any assumptions which might be classified either as reasonable or as dynamic. However, it is my feeling that most of their fears are not a function of the actuarial assumptions used in the projection but rather of the means and adequacy of the communication made to the employees. As I will discuss later, there are some situations where the projection is meaningless if some assumptions of increase are not made.

The simplest way of defending the effect of the assumption is to show two sets of figures, one assuming continuation of the status quo and one based on a reasonable set of assumptions. The fact that there are two sets of figures will establish in advance of any lawsuit that there is no implied guarantee of a standard of performance.

At this point, it seems necessary to express something which is obvious to me, but has not necessarily appeared so to the designers of benefit statements; that is, since projected benefits are based on actuarial assumptions, the assumptions must be explained on the statement, specifically with respect to the calculation of future benefits and possibly by reference with respect to any costs quoted. In other words, the statement figures will only have credibility if the employee can calculate the numbers shown, or can be referred to a reasonably simple calculation to see that there is no mystery in the derivation of the figures.

Since the large majority of nonactuaries are surprised the first time they come upon the compounding effect of interest, in order to make the point that benefits will increase in the future because of increased salaries or an investment return, it is not necessary to use the best estimates used in the actuarial valuation but merely to use what we used to think of as a conservative estimate showing some increase.

For example, where it is felt desirable to show the effect of an increased salary, then probably a 3% or 4% per year salary increase in the future can be assumed for the purposes of benefit projection. Such a rate would be large enough to startle the young employee who will see his salary increasing four-fold between now and retirement, large enough to prove the point the employer is trying to make as to the relationship between total pension income and final salary, yet not large enough to imply inflation to the end of time.

One place where such a projection could be deemed desirable would be in presenting the total projected retirement income including both the results of a pension plan and of a fairly generous thrift plan. For the young employee, in the thrift plan, a no-salary increase projection with a total employee-employer contribution of 6% of salary could well project an equivalent pension equal to his salary 40 years hence which when added to the projected pension and Social Security gives a projected retirement income far in excess of salary, a meaningless result which is not intended to be conveyed. Showing a second calculation which assumes salaries increase in the future at a 3% to 4% per year rate will produce a pension which bears the relationship to the final salary rate somewhat akin to that planned when the program was designed.

Although the employer may not be willing to put out projected results on an annual basis, in certain specific instances it will become absolutely necessary. One example I have heard of is where the plan was being changed from a career earnings to a final earnings approach at a substantial cost to the employer and the only way of illustrating why the employer was making the change and how the employees would benefit from the change was to calculate for each employee a projected pension on both plans using a salary scale and an assumed increase on Social Security.

This brings up another subject; that is, whether or not to use a dynamic assumption in projecting Social Security. It has been my experience that one of the most misunderstood parts of the entire employee benefit program is Social Security, not only as to how it is funded but more specifically as to how benefits are calculated. I am sure there are very few people outside of our profession who understand either the January 1st increase in covered wages or the mid-year increase in the benefit table and I do not believe that the time to educate them is in a benefit projection. Even though it appears

desirable to assume a continuing salary increase in the future I think all credibility will be lost if any attempt is made to try to get the participant to understand that Social Security will be increasing in the future. From our professional standpoint, I do not believe we should be using this assumption on benefit calculations because we know that within the next two or three years some major changes will have to be made to the Social Security system, at least to remove the double dip arrangement and hopefully to return the system to an actuarial balance. If we now assume that such a clean-up campaign will go forward, we cannot at the same time assume that the runaway increases we are currently experiencing will continue without cessation into the future.

Consequently, it is my feeling that any projected benefit increases in the future will incorporate two basic assumptions; that is, an interest assumption on any defined contribution plan and a salary rate increase for the purpose of projecting either contributions or benefits.

Another place where the courageous actuary might want to use projections other than the status quo is in giving an employee a feel of what benefits he or his surviving spouse may expect to receive in the future if he elects the early survivor annuity option in a plan where the participant is charged for the coverage in the form of a reduction in future pension. In this instance, the projection period is a lot shorter than we might be considering in other examples given previously with a maximum of ten years. We can feel fairly comfortable in projecting results forward showing both with no increase in salary or assuming a 3% per year salary increase and explaining on a year-by-year basis the benefit available to the surviving spouse and giving examples of what the effect would be if the participant retired at, say, ages 62 and 65.

The program suggests two other items that might be taken into account in projections; that is, early retirement ages and the reducing value of the dollar. Unless the employer has an active program of encouraging people to retire early, I cannot see him wanting to produce projections of benefits other than at the normal retirement age. However, such projections could easily be calculated and kept in the personnel file rather than transmitted to the employee. I have a hard time visualizing any situation where the employer would want to discuss the decreasing value of the dollar.

In conclusion, any benefit projections, whether based on the status quo or on assumed future increases, should have the basis clearly stated on the statement, should be in a form that can be demonstrated to the questioning employee with a hand calculator, should use assumptions which will appear to the employee reasonable for the long haul and which, are protected by sufficient caveats in simple language so that the employer (and possibly the actuary) is protected from the possibility of future lawsuits.

MS. RIEBOLD: I have been rather startled to find many actuaries feel the success of their statement is measured by how far they can understate the benefits. There is a great fear of decreasing accrued benefits which, of course, is a problem. But to the extent that the employer has contributed and continues to contribute a lot of money to the plan, I think our objective of the lowest possible accrued benefits has to be wondered at a little bit.

A second comment is this. I had hoped that the new emphasis on statements

would lead to a simplification of plan design. But it does not seem that it has.

MR. CLAUSEN: There is a third way we can produce statements; that is, what we might call an implicit approach to projecting benefits.

I think no matter what you do, the employee who is earning ten thousand dollars a year, is thinking in terms of ten thousand dollars a year as what he needs. There is no way you are going to get him away from thinking in terms of current dollars.

If you are projecting an account with 6% earnings, there is something built into that for inflation. The employee is not going to realize that the account balance at age 65 is not going to be as valuable as it now looks. Under the implicit approach, you would not factor in the inflation. Perhaps you would only accumulate the account at 3%, representing the real value of money. You will get an account balance which will be reasonable and which will represent what his account balance will really be at retirement in terms of today's dollars.

In another situation, if you have a final average pay-type plan, generally a person's final average pay will be between 90% and 95% of his pay at retirement. If you project no future earnings, anyone who is more than five years away from retirement will be basing his benefits on his current pay which will really tend to overstate his benefit. The implicit approach would be to assume that, for employees more than five years away from retirement, final average pay will be, for example, 90% of current pay. This understates the benefits, but states them properly in terms of what the projected benefit will be.

MR. FREILICH: I would like to underscore Bill's comments about the possibility of employee statements being used in lawsuits. One of my clients has already been sued on another issue, but one of the items of evidence introduced by the employee who brought suit was indeed his last several years' statements with the claim of the loss of pension and other benefits as shown on that statement.

One of the points Bill mentioned was the use of a salary scale backwards when estimating the Social Security benefits. We should always keep in mind that a low backwards salary scale assumption produces a high Social Security benefit. So it would be conservative in that circumstance to use the higher, perhaps 5% or 6%, salary assumption rather than 2% or 3%.

MR. CLAUSEN: My firm, as well as several others that I know of, has used a variation of the open group valuation method for many years. This is in the computation of the current service cost (normal cost). Consider a final average pay-type plan where the valuation uses the entry age normal method with each employee's normal costs designed to be a level percentage of that employee's pay in each year.

Some actuaries hold that this percentage should be that which would have funded the employee's benefits over his period of employment or participation. We think it makes more sense to ask ourselves what will this percentage ultimately be. For example, what will be the normal cost accrual rate under this plan when all the present employees have been replaced by new hires. This ultimate rate will be different:

- a) if benefit rates for past service differ from those for future service; or
- b) if the plan is integrated, because Social Security benefits or average wages may be relatively more or less important to new hires; or
- c) if employees are hired, or enter the plan, at a different age than was historically the case; or
- d) if the sex composition of the covered group changes.

If we do not employ this approach, and if the ultimate normal cost accrual rate is different from that for present employees, the normal cost accrual rate will change each time we do a valuation in the direction of the ultimate rate, as new hires replace those present employees who leave the group. Certainly, this is not consistent with our intention that normal costs should remain level as a percentage of payroll.

In practice, we ordinarily assume the ages at which employees will be hired in the future are the same ages at which present employees were hired, although if, for example, experience indicates that there has been a shift in average age at hire, we may base our age at hire assumption on the experience of recent years.

Although it is probably true that women will, in the future, represent a greater percentage of the nation's workforce and that those women will hold positions of relatively greater prominence than today, we are reluctant to factor these considerations into our valuations.

Finally, let me point out that the pay at hire of the employee assumed to replace any particular present employee should be determined as the present employee's current pay, discounted to his date of hire with a merit scale only, and then increased with economic scale only from the valuation date to the date of assumed replacement.

It is a relatively simple matter to go from the closed group valuation such as I have just described to an open group valuation. To keep the topic simple, let us make the assumption that the total number of active employees will remain unchanged into perpetuity. Let us further assume that our pay increase assumption is that the pay for each job will increase 4% per year and that employees will progress up the job ladder as they continue in service.

Under these assumptions, the total covered payroll will increase exactly 4% every year into perpetuity. If our interest rate is 8%, the present value of all future payrolls is the same as a perpetuity of this year's payroll valued at roughly 4%, which, of course, is 25 times this year's payroll.

In the absence of any information on the question, we think this assumption ought to be made, i.e., that the size of the active work force will remain the same. If experience indicates that the size of the work force is changing, or if the plan sponsor believes such is happening, certainly it is not unreasonable to take this into account.

Since we will normally have already computed the present value of future payroll for the closed group, we can solve for the present value of future pay-

roll for all future hires. If we assume our "ultimate" normal cost accrual rate applies to all new hires, we can compute the present value of future benefits for all new hires as the product of this accrual rate times the present value of future payroll for all new hires.

Absent ERISA, we might logically then compute a total cost accrual rate as the present value of all benefits that will ever become payable (whether to a present employee or a new hire) minus plan assets divided by the present value of all future payrolls.

The simple method I have just described takes the unfunded supplemental present value and in effect spreads payment therefor into perpetuity -- not unlike paying normal cost plus interest on the unfunded.

Clearly, this is not allowed by ERISA. But the question before the house is whether or not we can split the unfunded supplemental present value into two pieces, and then fund one piece over 40 years and spread the funding of the second piece into perpetuity. It has been suggested we only need fund over 40 years the unfunded value of the benefits guaranteed by the PBGC, or the unfunded value of vested benefits, or the unfunded unit credit reserve.

We all know that if a plan is fully funded on an entry age normal basis, it is probably grossly overfunded from a benefit security viewpoint. If we ignore the tax advantages of maximizing contributions to the plan, the approach that makes the most sense to me is to fund the accrued benefits (probably on the basis of benefits commencing immediately) over some short period of time (such as ten years), and then spread the remaining unfunded supplemental present value into perpetuity. Unfortunately, I can find nothing in Section 412 of the Internal Revenue Code which I can point to as permitting such an approach. As a result, I find myself back using a closed group valuation which produces identical results as an open group valuation.

Going through the preceding exercise has not been without benefit, however, because it gives us some insight in how to prepare what I shall call an open group projection, something my firm has done for quite a few of our clients, and something which these clients have universally found to be tremendously useful, both as to helping them understand pension plan costs and helping them to plan ahead.

In its simplest form -- and the simplest is generally the best -- such a projection would show what we expect to be the results of the next ten actuarial valuations, including how the total unfunded, the vested unfunded, and the total cost is expected to change from year to year, and the components of such changes.

Let me briefly run through one of these projections that I have done.

First, we have to estimate the total payroll which will go into the valuation. This is simply the preceding year's payroll increased using an economic pay increase rate (such as 7%), which often differs from that used in the valuation (particularly when implicit assumptions are used), plus an adjustment to reflect any expected change in the size of the work force.

We then compute each year's normal cost as the projected payroll for the year times the plan's accrual rate, which is expected to remain constant. Where the client has a history of periodically improving plan benefits, I like to

factor this into the accrual rate -- for instance, we might assume that plan amendments will have the impact of a 5% across-the-board increase in benefit rates every three years.

The next step is to estimate the actuarial gain or loss expected each year. Generally, this will be limited to the large items which might be expected, such as from pay increases or investment experience (the projection would ordinarily assume a different rate of investment return than that assumed in the valuation, so as to give the plan sponsor an idea of the impact of such gains or losses), or perhaps some expected unusually heavy early retirement experience.

Once we know the expected gain or loss, we can compute the following year's prior service and, hence, total cost. Combining this with a benefit payout projection and an interest rate assumption, we can then easily project plan assets. Using our expected gains and losses and our past service contributions, we can project our expected unfunded, and then finally solve for the total supplemental present value.

A projection such as I have just described can be done very economically if it is done just using rules of thumb. Obviously, the more precise the projection, the more it is going to cost. But even the roughest of projections will yield startling results. For example, plan sponsors that employ fixed dollar benefit plans that are periodically negotiated upwards will realize -- if they do not already know -- that the plan's unfunded may never be paid off, that it may grow into perpetuity. Declining businesses see that they can expect their pension contributions to grow as a percentage of payroll.

The only drawback to these projections that I have found -- and it is not really a drawback -- is that I now must explain the results of my valuation both as against last year's valuation and as against the projection for this year that I did last year. Although this adds to our workload, I have found this extra analysis to be extremely useful in helping me both to uncover valuation errors and to improve future projections that I make.

MS. RIEBOLD: I see one objection that could be used from an accounting viewpoint. Anyone knows that the cost of the pension plan is a function of its benefits, investments and so on. But our unique skill is to be able to assign that properly to a time period. And to the extent that we are using new entrants to fund benefits now, I do not think we have done our job correctly.

We have not assigned the cost for today's employees to today's time. We have let some of the credits from new entrants reduce today's cost.

A second concern I have arises from what I consider the dual role of the actuary as management consultant and funding watchdog. As far as our role as management consulting goes, we should use every tool we have. But as far as our role as funding watchdog goes, I am a little concerned about some of these approaches. The extent that one can say they produce adequate funding is a little questionable. To me there is a big distinction here in semantics. When we say open group projected benefit method, I think we have two concepts to deal with. One is the introduction of the new entrant assumption which any actuarial method can accommodate. The second is that, when this term is used, it is often referred to as a special type of method which has a different goal than we are used to. Unless it is specified further, it may not be appropriate for funding.

The goal of every recognized method is that the present value of all future benefits is separated in some fashion into three pieces -- the existing assets, the amount that is set up as a past service cost and amortized over some period, and an additional amount that represents annual accruals or normal costs under what is called the open group projected cost method. In fact, it is not this total present value of benefits which is considered and funded toward. Rather, a certain level of accrued benefits is the funding objective. For instance, the method with which you are most familiar would fund the PBGC liabilities over 30 years. There is no way that that represents the present value of all future benefits. To the extent that the goal itself is not further specified, I hesitate to say that we have satisfied our duties as funding watchdog.

MR. LUMSDEN: I question whether it is necessary to get any more Internal Revenue rules, in order to make a contribution that is somewhere between the minimum funding standard account and the maximum, bringing in some unknown open group method. Using what we might consider to be our best estimate in the future, we can justify a contribution. The contribution may have been selected under the open group method, but it can be justified for tax deduction and minimum funding standards under the present rules. Perhaps someone has run into problems on this, but so far no one on the panel has heard of it.

MR. FREILICH: The one thing we know for sure is that none of the pension plans we work with will last forever. That seems to me to be absolutely certain. The new entrant assumption in open group evaluation is crucial and it has been very frustrating to me that when discussing it with clients we have not been able to get to a new entrant assumption other than the one Norm has mentioned. Typically, our clients will say they think that their population will remain about the same. Well that is not true. And that seems to me to be a very vital assumption.

MS. ANNA MARIA RAPPAPORT: On the open group method, if you know that the costs are likely to go up in the future because of a declining work force or some other problem, do you feel that as the actuary you have some special responsibility to point out to the client that you should be making projections of what is likely to happen?

MR. LUMSDEN: Anna, can I take the extreme position? I was called in to set up a pension plan for the workers at the stockyards in Chicago at the time they were discussing closing the stockyard. It is the only study I have ever made of a new pension plan where during the same study I indicated what was going to happen if it closed down within the next three years or five years or ten years. I felt obligated to examine that possibility in the first report, not down the road.

MS. RIEBOLD: I would say in some cases that it is not only an informational item. In our role as the funding watchdog, we have to select a proper actuarial cost method. The use of a level cost approach is certainly not appropriate for a negotiated cents-per-hour plan in a declining industry.

MS. RAPPAPORT: It also seems that that would be the sort of information that you would have to attach to the Schedule B of Form 5500. The other comment I have is on the benefit statement. I have become increasingly concerned about the whole subject of disclosure and what it really does for consumers and what it really does not do for consumers. I submit that our society is spending millions of dollars to do something that is pretense in a lot of

ways. I think we, as actuaries, should think about keeping those benefit statements at the level that they are meaningful or as meaningful as possible to the employees. I believe in consumer protection, but I also think it is very easy to fool ourselves and that much of what we have done is not real consumer protection.

MR. CHARLES LAMBERT TROWBRIDGE: I would like to challenge actuaries to look at Social Security integration in just a little different way than we are used to looking at it. We are used to worrying about what the IRS regulations are and seeing how they could be improved and I am not against that, but I think our first problem is to design an integrated pension plan, entirely independent of the IRS rules, that makes sense. The Social Security benefits are so different from the typical private pension plan that designing a private pension plan which makes common sense when considered together with Social Security is a very difficult job. This is especially so because Social Security is changing every 15 minutes with inflation. So, if actuaries could really make a sensible idea as to how to design an integrated pension plan under modern conditions, then maybe the next step would be to find out how to get that within the integration rules.

On a different matter, if I understood Mr. Clausen correctly, he was discussing a method of funding a prior service liability in perpetuity as a level percentage of payroll, with payrolls increasing at 4% and with an 8% interest assumption. When you do that, what you are doing is paying 4% against the unfunded where the actual unfunded is going up at 8%. So notice what is happening -- the unfunded is not staying level. It is going up. We normally think that paying interest on the unfunded liability is holding it steady. Under this circumstance, it does not.

On the other hand, the fact that it is going up at 4% is not so disastrous because everything else is going up at 4% too. So the ratio of the unfunded to the total present values is holding relatively steady, but the dollar amount is going up.

MR. CLAUSEN: The method I was describing was one that at first blush might seem reasonable even though it does have that characteristic. I think ERISA mandates that we fund past service costs in level dollar amounts. My comments were directed to what we would do absent ERISA.

MR. KENNETH P. SHAPIRO: I would like to comment on salary scales and benefit statements with a real example we are now living through. In the preparation of the statement, we put a modest salary scale in thinking it would not have much effect. Someone terminated at age 45 after ten years of service, having completed 1/3 of his projected career. The benefit he received was, of course, nowhere near 1/3 the benefit we had projected. The individual has contacted the Department of Labor and the situation is yet unresolved. The negative public relations of the whole issue has outweighed the value of the benefit statements.

MR. LUMSDEN: The point I made was that if you put something in with a salary scale, you should also put the same number in without the salary scale and put the two numbers side by side. I think there is less chance of misunderstanding than if you just put one number in with the salary scale.

MR. GERALD A. LEVY: My question is a practical one concerning the administration of Social Security offset plans. Getting salary history information for

retirees, including early retirees and terminated members, to produce an offset is rather complicated at times and sometimes impossible. I wonder if there are administrative rules that can be put into the plan which are effective at reducing this problem?

MR. FREILICH: I would say yes. We do have some clients who define very specifically within the plan document what I will call here a simulated Social Security benefit. They say very specifically what will be assumed for earnings prior to retirement or termination and what will be assumed for earnings subsequent to retirement or termination and define exactly how the "Social Security benefit" will be calculated. That is all well and good, but there have been problems arising, as you would expect, when the employee actually retires and he compares this simulated Social Security offset to his actual Social Security benefit. Our approach to that has been to try to simulate the Social Security benefit offset in a way that will produce a lower number than the actual Social Security benefit, but hopefully close.

MS. RIEBOLD: In this case you mentioned, would the employee be able to use his actual benefit or would he be limited to what the plan provided?

MR. FREILICH: The plan is very specific and it defines the benefit exactly. The chips fall where they may. The differences have been quite small, particularly when you are talking about a 50% offset where any difference is cut in half anyway.

MR. JOHN H. GRADY: On the open group method, it seems to me that since the services that gave rise to the past service liability are in the past, we cannot get the money for those from spreading the cost over a fixed period of time in the future. Take a public system, for example. The taxpayers who got the benefit of those services in the past are not around any longer. If we amortize that unfunded liability over a fixed period in the future, that contribution is, of course, a declining percentage of pay. That does not make much sense to me. It makes more sense to have a level contribution rate as a percentage of total pay, including future entrants.

I think our role as funding watchdogs does not affect how we try to allocate costs between generations of taxpayers on the public plan side, or between customers and products, on the corporate side. I think our funding watchdog obligations come in in making sure our assumptions are realistic and lead to an accurate assessment of the cost of the plan.

MR. FREILICH: Let us go onto the fourth subject which has to do with best estimate limitations -- individual actuaries versus company policies and guidelines.

I would resent it very much personally if my firm limited my range of reasonableness in setting assumptions. Maybe it would be good if each of us here tried to explain how their firms are handling this problem.

MR. CLAUSEN: My firm's approach has been to establish as a firm what we think are the boundaries of reasonable assumptions. We think a reasonable assumption would be that inflation should be somewhere, for example, between three and six percent or something like that. The same has been done with some of the other factors. As long as the actuary is in that range, we deem him to be reasonable. We let him do whatever he feels is appropriate. If he wants to go outside that range, we have a committee from which he has to seek approval.

The firm does not want any of its actuaries doing something that the firm thinks is unreasonable. We have not had any problems with anyone wanting to go outside that range.

MS. RIEBOLD: I would say we have no national policy whatever with regard to constraints. Our one national policy does provide that important reports and documents should be reviewed by another actuary before they are issued. Various offices have independently set up their own professional standards committees that monitor assumptions. Some of them have taken the approach that Norm mentioned and some have taken no approach whatsoever.

MR. LUMSDEN: We have recently been bought by a larger firm. In the former firm, we did have a stated set of guidelines. We did not have a committee to go to, just a statement that here are the guidelines. If you stay within these guidelines, the firm will stand behind you. Outside, you better have a lot of justification. In the new firm, we have an actuarial committee which is trying to develop some guidelines. We do not have any peer review but we do have a lot of discussion inside the offices as to what is happening. I am afraid we are going to get to it because of the way the accountants are leaning over our shoulders.

MR. FREILICH: The auditors are, of course, sending out questionnaires to us every year. Ernst and Ernst recently put out a seven or eight page questionnaire. The last two questions on this questionnaire go like this. One asks if your firm is an enrolled actuary. The second one asks if your firm is a Fellow or Associate of the Society of Actuaries. It all seems to me to be related because we are individually responsible as enrolled actuaries for the assumptions and methods. It seems to me that my firm's position is irrelevant. It would be a real battle if the firm and I disagreed on a particular set of assumptions. Our own firm does have an advisory board which has been doing a lot of work in accumulating and distributing survey-type information on assumptions and methods that are in use, both those that we are using and those others use. There is the implication that there are ranges of reasonableness. But certainly we do not have any restrictions at all at this point.

MR. LUMSDEN: It behooves us to try and get our firm to stand behind us, especially when our assumptions might be considered to be questionable in light of generally acceptable actuarial practices.

MR. DANIEL M. ARNOLD: The Canadian Institute of Actuaries recently came out with a range of assumptions which I might invite your attention to. I wonder if we could have the reaction of the panel to the possibility of the Society or American Academy issuing such a range of assumptions, with an indication that anything outside of that range would require additional justification.

MR. FREILICH: I would not object to that at all. As long as additional justification is allowed and encouraged, I would have no problem. Presumably, if I were using a set of assumptions outside the range, I would have justified that to myself in the first place. I would expect, therefore, to be able to justify it to a committee of the Society or American Academy.

MR. LUMSDEN: I plan to paraphrase these Canadian guidelines in writing the guidelines for my firm. I like the language that was used and I like the general ranges of assumptions. They are broad enough so that I do not think anyone would have any problem living within that range.

MR. CLAUSEN: My understanding was that this was merely a survey of what people were doing. I would love to see that done in the United States also. I think it would be valuable.

