THE LAW, THE ATTORNEY, THE PUBLIC AND THE EXPERT

by

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[The motto of the Society of Actuaries is "The work of science is to substitute facts for appearances and demonstrations for impressions". Today, we will dwell mainly upon perceptions, as developed by this biased observer.]

Ten years ago, a number of papers were published and discussed by IACA. Among them were two which concerned the temerity ("chutzpah") of my trying to compete with larger, much larger consulting actuarial firms, and the problems we were having with the regulations.

This year, the "chutzpah" involves my acting as an expert witness and trying to explain the way actuaries work to lawyers, judges, juries and even, upon occasion, clients.

In the decade since the 1982 meeting at Stratford Upon Avon, the laws and regulations concerning qualified retirement plans have become more complex and disjointed, leading to confusion on the part of clients, regulators and consulting actuaries. Many actuaries have expressed the opinion that, because of the complexity of the laws and regulations, almost every qualified plan is, unknowingly, in violation of at least one regulation.

One unfortunate result of this morass is the rise in the number of law suits involving retirement plans and consulting actuaries. To exacerbate the situation further, the U. S. Internal Revenue Service has challenged the deductions for contributions made to a

large number of defined benefit plans.

The basis for the challenges was a determination by the Internal Revenue Service that

- the assumptions used to determine the contributions were unreasonable; and

- in some cases, the method used was inappropriate.

These challenges, accomplished through a series of audits imposed mainly upon small plans, resulted in a lot of discussions and arguments within the actuarial and legal communities and culminated in a series of trials, the first of which was scheduled to begin in the winter of this year.

Early in 1990, a number of attorneys, who were defending the challenged plans, met in Phoenix to discuss the strategy they would use to defend the actuarial assumptions and methods. During the meeting, one of the lead attorneys said that a major difficulty with the cases is that "...judges do not understand all this actuarial gobbledygook!..." To me, it meant he did not understand what we did...and he was going to defend us!

In most cases, the problem lies in the inability of members of our profession to adequately express themselves to non-actuaries. This inability has a number of causes:

a concern for the amount of chargeable time which would be entailed if we were to sit down and explain things thoroughly to client;

an apparent desire to set ourselves apart from the real world and use terms which mean whatever we want them to mean

at that moment in time;

our desire to use short sentences; and

occasionally, the desire to deliberately confuse the public in order to defend a position. (This usually rears its ugly head in situations involving expert witness testimony.)

In a society as litigation prone as ours has become, the need to express ourselves carefully cannot be overemphasized.

This paper reviews (a) some items which have caused attorneys concern with our "..actuarial gobbledygook" and (b) some attempts to respond to the specifics and remove some of the mystique from our profession. It presents some approaches to explaining to lay persons

- the range of reasonable assumptions;
- funding methods; and
- distinctions among benefits, assumptions and methods.

Actuarial assumptions and funding methods are concerned with the amounts and the timing of contributions to the fund made by the company in order to provide the benefits promised. To better manage the annual contributions to a pension plan, the employer looks to a method of estimating the future costs of the plan and then arriving at a method of paying for the costs.

A. Assumptions - The Estimating Process

The process of estimating costs brings the actuary into the field

of probabilities.

1. How many people will survive in the work force to receive a benefit? This concerns mortality, disability and other pre-retirement termination rates.

2. How much will the individual be entitled to receive when he leaves the work force. This involves salary and cost of living rates.

3. For how long will the person receive the benefits? This involves post-retirement mortality, remarriage and recovery from disability rates.

4. What will be the investment earnings of the amounts which have been pre-funded, and what are the current values of moneys to be paid in the future? These are the investment yields.

Once the assumptions have been made, the actuary's calculation ("valuation") produces an estimate of the total value of the benefits to be provided by the plan.

There is no single set of assumptions which can be called "the only reasonable combination". There is no single result of values of benefits which can be called "the only reasonable value of benefits".

These two sentences are basic to what is involved in determining a combination of assumptions which are reasonable in the aggregate. It means there are infinite variations of assumptions which, when combined with each other, will produce a range of values which are reasonable, even though they are different.

There are economists who have widely diverging opinions as to the direction of the economy of our country. Decisions are made by others which depend upon the weight given to a particular economist's estimate of the future. Just because the results based upon one economist's estimate are different from those based upon another economist, does not make the prediction an "unreasonable one".

So it is with the actuary. We have those who are extremely pessimistic concerning future economic events. Others are extremely optimistic about the same events. Most actuaries will tend to fall between the two extremes. However, all such estimates fall within the range of reasonable.

In a recent law suit, a judge was trying to decide whether consultant C committed actuarial malpractice. In order to make this decision, he concentrated on the absolute dollar level of the contribution for a particular plan year.

The plan has a normal retirement benefit based upon years of service and final average salary. Normal retirement is at age 65, and there is a highly subsidized early retirement benefit which is available after age 55.

The key assumptions used by the consulting actuary were a single retirement age (65), a relatively low discount rate for the years in question (6%), and a salary scale of 4%. On that basis, and using an aggregate method of funding, the suggested contributions for the years involved were about $1,000,000. The consultant argued that the low discount rate, compared to the double digit investment yields of the year in question, compensated for the subsidized early retirement benefits.

The plaintiff's actuary, P, demonstrated that most employees

retired at age 62 and took the subsidized early retirement benefit. Therefore, when P calculates the contribution using the same assumptions as those used by C, except for the change in assumed retirement age, the dollar amount should be $1,400,000 in the last year. This is 40% higher than the amount calculated by C and therefore, C has committed actuarial malpractice.

In his defense, C claims to have used assumptions which were reasonable in the aggregate. Further, it is inappropriate to change one assumption without determining whether there should be a change in an offsetting assumption. As support for this argument, he had an independent actuary, D, calculate the contributions based upon assumptions which, individually, are more "reasonable". The key assumptions used include a discount rate of 8.5%, a salary scale of 6%, and rates at varying retirement ages which are based upon the plan's experience.

The results of these calculations produce a contribution rate of about $1,000,000 for the years in question, using the same aggregate method, and a range of $900,000 to $1,400,000 using an entry age normal method.

When asked by the judge whether the $1,000,000 contribution was reasonable, D answered "Yes."

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When asked whether a set of assumptions, which might be unreasonable individually, could develop a reasonable contribution, he answered in the affirmative and referred the judge to P's result as an example of an unreasonable approach to assumptions yielding, by coincidence, a reasonable result.

The judge then asked how each of two contributions for a given year, which differ by as much as 40%, can be reasonable.

The plan's trust's assets were approximately $10,000,000, and the present values of benefits ranged between $20,000,000 and $24,000,000. So the following explanation was given.

> Assume that when we were married fifteen years ago, my wife told me we were going to buy a house on the hill on our twenty-fifth anniversary. As a result, we have been saving a nest egg which has grown to $100,000.
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> This year, in order to determine whether we are on track, I asked an architect to estimate what it will cost to buy the house on the hill ten years from now. He reviews his files, checks the current prices of homes, estimates inflation and determines that such a house will cost about $200,000. This means we need to save another $100,000.
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> My dear wife always wants a second opinion. So she calls another architect and asks the same question. He reviews his files, determines the current land and construction costs, estimates the inflation factors applicable to each, throws in some estimated changes in governmental fees and gives us his opinion that the cost will be about $240,000 ten years from now. We will need an additional $140,000.
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> We have two estimates of the future cost of a home. The difference between the two is only 20%, which is well within the bounds of reasonableness. However, because we have available a nest egg of $100,000, the funding difference between the two becomes 40%.
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> Therefore, a funding difference of 40% can be reasonable.

B. Funding Methods

The funding method is in accordance with the company's financial management goals. If it makes higher contributions in the early years of a pension plan, then later years' payments will be lower. If early contributions are lower, then later years' payments will be higher.

The funding of a pension plan is similar to the mortgage payments on a house. The larger the down payment, the smaller the future payments have to be. The value of the house has not changed, only the incidence of the payments has been altered.

The house can be paid for in a number of ways:

- interest only each year with the full balance due at the end of the term;

- immediate payment in full;

- a long term mortgage with payments based upon fixed or variable interest and an amortization of principal; and

- a combination of mortgages, with or without an initial down payment.

The variations for pension plan funding methods are similar to those for the house. Complexities arise because the value of the "house" (or benefit to be received by the participant) is not known until the employee receives his last payment. Therefore, the estimates of the plan's costs invariably will be wrong. Each year's experience will produce results which differ from the assumptions used. These differences are taken into account in future contributions.

The result is an annual appraisal of the value of the benefits which will be given in the future and an assessment of the difference between that amount and the value of any assets which have been accumulated to provide the benefits.

A basic tenet of the actuarial profession is the knowledge that none of our assumptions will be met exactly. Rather, we expect our estimates to produce results which are approximate and which will be adjusted periodically as we get closer and closer to the end result.

As our estimates develop contributions which are too low or too high during a period of time, the following contributions will adjust these "errors". We try to straddle the target until we get closer and closer to the "bulls-eye".

C. The Language of Real and Assumed Benefits and Liabilities

One of the difficulties encountered by non-actuaries is that they become confused with the terminology we have developed with our actuarial cost methods.

"Accrued liability", "past service liability", "supplemental liability", and the like are not true liabilities in the accounting sense. Rather they are the portion of the estimated costs of the plan which have been artificially segregated by the particular actuarial cost method.

For example, let us assume a new pension plan which provides an employee with a $300 lump sum payment upon his attainment of age 65. Let us further ignore both the possibility of his terminating employment before then, and the effect of interest.

For an employee now aged 50, we can fund this benefit in 15 equal

annual contributions of $20. In this method, the $20 is its "normal cost", and it is a level, inflexible funding method.

If the plan had been in effect for 15 years, since the employee was then aged 35, it would have required annual contributions (its "normal cost") of $10. We would have accumulated a fund of $150, which, when added to the next 15 years' contributions, would reach the $300 goal.

But the plan was not in effect 15 years ago; nor was the person necessarily employed at that time. What can we do?

Well, another method allows us to assume the plan had been in effect at that time, the person had been employed at age 35, and we do have an artificial fund of $150. This artificial fund carries the unfortunate designation of some sort of liability, such as "accrued liability" or "past service liability". This is so even though the person has earned no benefit in the plan and the plan has no liability to that person if he should leave today.

Why would we choose this other method?

Methods of funding are chosen in order to help meet a company's financial management goals. This alternate method provides the company with flexibility in the amount of contribution it can make in any year.

In the example, the value of the plan has been split into two pieces. The make believe accumulated fund, and the value of the future payments. The annual funding follows the two pieces as if they were two mortgages. There is the $10 normal cost for the future payments mortgage. The other mortgage (the accumulated fund) can be amortized with payments over a period of at least

10, and no more than 30 years. So, this year's contribution can range from as little as $15 to as much as $25. And, if we contribute $25 this year, next year's range is $5 to $25.

D. Results and Prognosis

The use of a house and mortgages as substitutes for benefits and funding seems to have resulted in a better understanding, by non-actuaries, of our assumption and funding techniques. However, there are still many confused people out there, and litigation continues to raise its ugly, albeit profitable (for witnesses) head.

There is one sentence in the law pertaining to retirement plans which states that plans may not discriminate unfairly. This sentence has been in effect for many years. The Internal Revenue Service has just issued over 400 pages of regulations to help us understand that sentence. Many of the regulations change the way we have been interpreting the law and will require reevaluation of almost all plans.

The complexities of the newly issued regulations make it apparent that few people, in or out of government, will have a full grasp of their intent. It appears as if the Internal Revenue Service has created a new area of financial reward for consulting actuaries....there will be many opportunities for us to provide expert testimony.....