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CONSULTING ACTUARIES SESSION

I. *Communications*

A. In what ways are actuaries communicating directly with the following?

1. Life and health insurance companies:
   a) Executive officers
   b) Boards of directors
   c) Stockholders (if any)
   d) Policyholders
   e) Regulatory officials
   f) General public
2. Employers or trusts (with pensions or group plans):
   a) Financial and corporate officers
   b) Boards of directors (or trustees)
   c) Stockholders (if any)
   d) Plan participants
   e) Regulatory officials
   f) General public

CHAIRMAN JAMES A. HAMILTON, at the introduction of the session, provided the following figures on the numbers of consulting actuaries in the Society over the years.

CONSULTING ACTUARIES* AS PERCENTAGE OF ALL ACTUARIES PER SOCIETY OF ACTUARIES "YEAR BOOKS"

Date	Year Book	All Actuaries			Consulting Actuaries			Ratio Per Cent Consulting to All		
		F.S.A.	A.S.A.	Together	F.S.A.	A.S.A.	Together	F.S.A.	A.S.A.	Together
1/1/57..	1957	932	725	1,657	99	85	184	10.6%	11.7%	11.1%
1/1/61..	1961	1,140	864	2,004	141	123	264	12.4	14.2	13.2
12/1/61..	1962	1,196	896	2,092	153	127	280	12.8	14.2	13.4
12/1/62..	1963	1,259	939	2,198	171	143	314	13.6	15.2	14.3
12/1/63..	1964	1,326	983	2,309	186	158	344	14.0	16.1	14.9
12/1/64..	1965	1,377	1,071	2,448	200	171	371	14.5	16.0	15.2
12/1/65..	1966	1,446	1,217	2,663	209	207	416	14.5	17.0	15.6
12/1/66..	1967	1,542	1,306	2,848	243	233	476	15.8	17.8	16.7
12/1/67..	1968	1,650	1,411	3,061	267	264	531	16.2	18.7	17.3
Ratio (per cent)	1968–57	177%	195%	185%	270%	311%	289%	......	......	......

* Believed to be reasonably accurate but necessarily based primarily on professional activity identification as set out in indicated *Year Book*.

MR. M. DAVID R. BROWN: Consulting actuaries, to an even greater degree than our colleagues employed by insurance companies, succeed or fail to the degree that we persuade or fail to persuade nonactuaries to act on the practical results of advice which to most of them is based on very technical and unfamiliar ideas.

In what ways are actuaries communicating with life and health insurance companies' executive officers? The less sophisticated and knowledgeable the "communicees," the more important will be the communications aspect of the actuary's functions. The actuary must be especially sure that the officers understand fully the rules of whatever game it is they are proposing to play, whether it be individual variable annuities or group dental insurance. At a more significant level, the actuary typically finds himself trying to communicate financial implications and probable results. To do this, he will often ask questions that the company's officers may never have considered, and he will often interpret the results of what has happened and the reasons for the results in a way quite novel to them. He must be sure that he has properly understood the management's existing or intended method of operation and its objectives. The time dimension and the distinction between overhead and unit costs are often the critical things which the actuary has to get across. The use of projections and other quantitative models, especially if they can be prepared on several variations or critical assumptions, can be very helpful in giving management the "feel" of alternative courses of action and the relative importance of the various parameters affecting results.

The actuary's direct communications with boards of directors are usually much more limited, except under such extraordinary circumstances as a merger discussion or consideration of a major change in the company's operation, especially those requiring new financing. Communications with directors, however, often demand the greatest skill. A director is frequently a very shrewd fellow who requires a common-sense answer to a very technical question in words of one syllable (or less). On the other hand, directors may be less concerned than management is with merely generating a lot of activity and more concerned with the general soundness and profitability of the company. As a result, the actuary's communications with them can be much simpler (in the sense of being less technical).

In my experience, the actuary's direct communications with stockholders, policyholders and the general public (apart from those who are also officers or directors) are practically nonexistent.

This leaves regulatory officials, with whom the actuary frequently has direct communication, but unfortunately this is all too often in a

rather rigidly confined context. More than most others, these officials tend to demand straight "yes" or "no" answers to complicated questions. The most important thing for the actuary to remember in these communications is that what the client is doing or proposing to do is clearly permissible under the relevant statute or regulation, and so much so that the official can, if need be, persuade his political superiors that this is so.

As for the actuary's communications in the context of employers or trusts (with pensions or group plans), the prescribed subheading of financial and corporate officers only seems to apply in the case of employers. The corporate treasurer and industrial relations officer are the people charged with actually carrying out the programs about which the actuary advises them. So again, it is important at the elementary level for the actuary to be sure they are acquainted with the rules of whatever game they propose to play and all the consequences of those rules. Having established that, the actuary may very often find it necessary to give these officers at least a rudimentary notion of some technical concepts, whether it be the rationale of the entry age normal funding method or the funding of postretirement group insurance. Most actuaries run into this kind of communications problem often enough that they have two or three alternative lines of explanation to get these unfamiliar ideas across. This kind of communication is critically important if the treasurer or industrial relations man is going to have confidence in you.

We have seen a great deal of activity in the past few years in the area of communications with plan participants in regard to the real nature and value of their benefits. I think there is considerable danger in handing a computer-produced statement to an employee which says that the value of his benefits over the past year is x dollars or y cents per hour. To begin with, he may not believe the figure. In addition, if he does believe it, his next question may be either (*a*) "OK, why can't I have the x dollars in my pocket instead?" or (*b*) "How come we only get such a rotten plan for so much money?" In other words, unless you can also tell him *why* his benefits are worth x amount, you may be happy to say nothing.

MR. GEORGE BRUMMER: The basic purpose of communications is to achieve a reasonable level of understanding between actuary and client and thereby create confidence on the part of one for the work being performed by the other.

To attain this goal, we must learn to speak the other man's language. Educating him as to actuarial concepts and terminology is a fruitful approach, but we must accept the fact that generally he is not interested in

such an education (if he were, he would probably be an actuary) and is too busy with his other problems to spend the time needed to get it.

In short, we actuaries must broaden ourselves to the point where we can explain our ideas and methods by use of the other man's terms, whether he be an agency vice-president, an accountant, an attorney, an industrialist, or whatever.

MR. BLACKBURN H. HAZLEHURST: These remarks are addressed to employee benefit actuarial problems.

Quite frequently actuaries use assumptions which may be less than completely realistic individually but when taken together produce a satisfactory result. For example, a waiting period for funding may be substituted for a portion of the turnover discount. Even more frequently, the actuary may use a lower rate of interest than he really expects will be earned, bearing in mind that the salary scale he has used probably allows for seniority increases only and not for inflationary increases in the entire salary scale.

With the increasing attention paid to pension plans by regulatory-type groups (accountants, the SEC, and others), it seems to me that these approaches can be gravely misleading. I feel it is time to try to come up with assumptions which are individually realistic.

As an example, it seems to me desirable to use a probable rate of investment return, including allowance for growth in asset values; a probable salary scale, including allowance for inflationary lifts in the entire scale; a probable rate of turnover, including allowance for variations in select and ultimate turnovers; and probable social security benefit relationships, including allowance for continued improvement in social security benefits and increases in affected earnings.

By using more probable assumptions, we can reduce misunderstandings. Among the misunderstandings, for example, is the notion that benefits can be liberalized because investment yields are outrunning actuarial assumptions (ignoring the fact that the actuary needs extra yield to help offset the deficiency in the salary-scale assumption). Another growing area of misunderstanding is the notion that a variable annuity benefit can be provided at little or no cost by simply setting aside a portion of the existing actuarial reserve (ignoring the great loss in additional yield which the actuary really expects).

If need be, we should try to sit down with the Internal Revenue Service to win its assent to the use of such assumptions. I think they would be willing to accept inflationary adjustments on the liability side

if we were using realistic assumptions on the asset side as well. If this cannot be worked out, as a last resort a double valuation can be made, using the old-fashioned combination of individually unrealistic assumptions to produce roughly the same result, but keeping the valuation, using individually realistic assumptions clearly in front of those responsible for determination of benefits and contributions to be made.

The actuary's report should clearly spell out not only the assumptions he has used but also the manner in which he has allowed for inflationary increase in salaries, probable future changes in social security, and so forth. Preferably, this should include some quantitative comment along the lines that, if inflationary pressures continue, X per cent additional yield may reasonably be expected, which would be sufficient to offset a continuation of past inflationary increases in salaries.

By way of preventing further misunderstanding, it seems to me desirable to incorporate in the actuarial report a statement as to the benefit security ratio of each priority group as if the plan were shut down on the valuation date. This display would have the advantage of providing a snapshot of the current relationship between assets and liabilities for accrued benefits.

Displaying the benefit security ratio for each priority group each year would also have the advantage of showing the progress in funding stated in those terms and clarifying the impact of plan amendment on benefit security ratios. For example, improvements in the plan will frequently cause the benefit security ratio to be diminished not only in terms of a percentage of the new higher benefits but also in terms of the absolute dollars of benefit available to the lower-priority groups after the plan has been improved and the high-priority groups have become entitled to a greater share of the existing fund.

It would also be helpful to show the benefit security ratio and the dollar amount of plan shutdown benefits to each individual participant each year, along with whatever other going-forward projections may seem desirable. The plan shutdown benefit statement may be somewhat sobering but is consistent with what is shown in every case under profit-sharing plans and would allow the pressures of the market place to take their natural course without requiring so much government intervention.

With respect to government intervention, the suggestions discussed above have some drawbacks. For example, they force the actuary to think harder and to state his position in terms that can be more clearly understood and perhaps second-guessed. The suggestions may also imply

responsiveness to changes in experience, that is, a closer review of experience and more frequent revisions in assumptions to keep them individually realistic.

In any case, they represent a change from most present practices, and change is expensive and tends to be resisted, particularly when actuaries are already overworked. Another drawback is that most corporations would prefer not to talk in terms of plan shutdown at all, much less disclose benefit security ratios which may be quite low for certain groups and may even behave mysteriously as plan improvements are made. In other words, it may take some serious urging to put this kind of suggestion into effect, urging which could be accomplished by the federal government or other regulatory agency.

On the other hand, any guidelines with respect to assumptions or methodology will not be easy to set up or to keep up to date, and surely such guidelines would be better established by actuaries than by a nonactuarial regulatory group.

Accordingly, it is also my suggestion that actuaries consider following the precedent of accountants in establishing and maintaining opinions in certain areas that are expected to be observed by actuaries who are in the position of making statements that will be relied upon by those responsible for financially supporting future benefits and by those expecting to receive future benefits.

MR. DOUGLAS C. BORTON: It is extremely important to use accurate data in preparing benefit statements for employees, particularly those who are close to retirement. For example, it may be appropriate to ignore noncredited leaves of absence in the actuarial valuation if their over-all effect is negligible. However, they must be considered in preparing individual employee statements.

I would also like to emphasize that advising individual employees on their benefit security ratios could be misleading. For example, an employee might receive a statement one year which indicates that his benefit security ratio is 90 per cent. If the market value of the funds held were to drop during the subsequent year, the employee's statement might show an 80 per cent ratio the next year. The reduction in the ratio would be of no practical significance under a continuing plan. However, it is likely that the employee would become unduly alarmed when he received the second statement.

B. What are the actuary's responsibilities with respect to initiating communications to parties interested in the subject of the actuary's work? What do interested parties expect of the professional actuary?

MR. EDWARD H. FRIEND: First of all, I think it is well for the professional actuary to look upon himself as the general contractor in each area of endeavor. For example, if he is involved in the installation of a pension plan, I feel he has a responsibility to see that every base has been touched and in timely fashion, whether it be by the employer, the attorney, the accountant, the trustee, or himself. This does not mean to say that the actuary must *do* everything, but simply that he be concerned as to whether or not it has been done as it should be done. I say this because it seems to me that the professional actuary is the only party that can be expected to have the full overview. This capability implies responsibility.

Second, I think the actuary has a responsibility to adhere to his code of ethics. I am afraid that too often we forget what it says, particularly as to "misleading."

Third, I think the actuary has a responsibility to educate his client in order that he can better understand the bases and assumptions leading to his findings and recommendations, so that the client is not lulled into the feeling that the actuary's findings are to be accepted as absolute and exact.

Finally, I think an extremely good point was made by Tom Wills yesterday when he said that the actuary has a public responsibility to assist regulatory authorities in developing sound and workable legislation, even though he opposes the restrictions which such legislation implies.

MR. WILLIAM A. HALVORSON: The silence of the actuary is often deafening—when a "roar" might be needed.

Can there be any question that the actuary has to be involved in planning his company's future? The president of any life or health company will almost always have an actuary by his side. He needs the actuary to help him review his alternatives and project the effect of his decisions on the future of the company. The board of directors of the company, in turn, has the responsibilities of giving the company over-all direction and of keeping tabs on how the company is doing in attaining its long- and short-range objectives. Of necessity, they must rely on the president and executive committee. They can and do assume that the president is competent and that he has made effective use of his actuary.

If the president or the board is not asking the actuary for direct help in planning and projecting, or in the analysis of where the company is or where it is going under present conditions, it seems clear that the actuary has a professional duty to ask himself those questions. As soon as he is able to demonstrate answers to these vital questions, he must communicate them to his president, since the board assumes that the actuary is keeping the president so informed. If the actuary believes that the board is not being informed on the facts, again he has a professional duty to "substitute facts for impressions" for those board members, to whom he is ultimately responsible.

As a past president of the Society once told me, his role with the board was to outline the details and the hazards of the various paths his company could take to reach the objectives set by the board—not to make their decisions for them but to make sure that they were fully apprised of the risks involved along the different roads that were open to them.

I am not nominating each actuary for the presidency of his company. Rather, I am saying that our companies depend upon us to keep them informed and that this is not a passive role but an active one in which we must initiate the communication if necessary.

C. Are there avenues for ongoing communications between actuaries and other professionals, chiefly attorneys and accountants?

MR. HARVEY J. SAFFEIR: There are three groups of professionals with whom actuaries come in contact: (*a*) accountants, (*b*) attorneys, and (*c*) investment advisers.

As for the accountants, we almost never came into contact with them before the advent of *Accounting Opinion No. 8*. Since then, we have had many meetings with accountants, and these meetings have essentially been peaceful. Perhaps this is because the accountants were seeking knowledge. The future is less clear, because we have come across situations where the accountants are starting to try to set actuarial assumptions.

There are no formal ties between the Society of Actuaries and any recognized accounting bodies. In the future there will probably be a need for a formal tie so that difficulties can be referred to higher authorities.

We come into more contact with attorneys—on tax matters and on plan documents. The various bar associations have an unauthorized practice of law committee and in the past, in certain jurisdictions, actuaries have been criticized for the writing of plan documents, for the preparation of tax tables, and for the preparation of D2 filings. While for the most

part the relationship between attorneys and actuaries is cordial, there is the possibility of future difficulties, and this suggests that a formal tie between the actuarial society and the legal profession would be desirable. Until recent times there has been no contact between actuaries and investment advisers. However, some firms have started investment-performance surveys; that is, they compare the performance of one trust against another. We, as actuaries, do not claim expertise in the investment area; however, we do see a great number of trust statements and we do have an idea of what a good yield is and the proportion of stocks and equities existing in the typical portfolio. There are no formal ties between the investment fraternity and the actuaries, and perhaps such a tie in the future would also be desirable.

MR. FREDERICK W. KILBOURNE: We frequently are called upon to certify actuarial items in an annual statement being audited by an accounting firm. I usually discuss the division of responsibilities with the accountant and later send him a letter specifying (1) the items for which we will take direct responsibility (such as the life insurance policy reserve), by means of our certificate to the company; (2) the items for which we will take indirect responsibility (such as the loading in deferred premiums), by means of a letter to the accounting firm; and (3) the items for which we will expect indirect responsibility to be assumed by the accounting firm (such as the valuation in-force file), by means of a letter to us.

II. *Pension Consulting*

A. What factors affect the employer's choice between the following alternatives:
   1. Establishing a single-employer plan rather than participating in an area-wide plan?
   2. Setting up different pension plans at different plant locations rather than a single, corporation-wide plan?
   3. Maintaining different plans for salaried employees and for hourly employees rather than a single plan?

MR. EDWARD H. FRIEND: In answer to question 1, the results of collective bargaining often preclude any choice between a single-employer plan and an area-wide plan, as the ultimate collective-bargaining agreement requires the employer to contribute so many cents per hour into an area-wide plan. Where the collective-bargaining agreement calls for so many cents per hour and the employer *does* have a choice, the cost to the employer would *seem* to be the same, whether the contributions are to an area plan or to a plan set up by the employer. However, the employer might look beyond the current negotiated agreement and ask several questions.

First, will the cents-per-hour contributions to my plan provide larger benefits than those provided by the area-wide plan because of the age, service, and salary mix of my employees or because I can invest my contributions more wisely than the area-wide-plan trustees? And, if so, will I be able to be in a favorable position to negotiate lesser increases during the next negotiation?

Second, will I be in a better position to influence the pattern of benefits to be provided under *my* plan and, if so, am I concerned about these matters?

Third, if I go into the area-wide plan, will I more likely be affected by the collective bargaining of other employers who are also party to the area-wide plan? If so, will the financial position or collective-bargaining climate facing these other employers have a favorable or an unfavorable effect on what happens to me?

Fourth, do I expect many of my employees to come from or go to other employers in the area-wide plan? If so, can I honestly expect my single-employer plan to be satisfactory once the absence of probability of credits is apparent to the union? If this is a consideration, can I prepare for this problem by setting up practical reciprocity arrangements with the area-wide plan?

Practical considerations prevent the creation of an area-wide negoti-

ated-benefit plan. For this reason, an employer who has advance reasons for wanting to avoid any consideration of an area-wide plan will attempt to channel his union negotiations so that the benefits are negotiated rather than the costs.

In reference to question 2, one obvious factor influencing the establishment of different pension plans at different plant locations would be the wage levels of the different plant locations. Another factor would be differences in the compensation of employees. One plant may have a mixture of highly skilled employees earning high wages along with semiskilled employees earning lower wages, while another plant may have only semiskilled employees. A flat unit-benefit-type plan would probably be unsatisfactory for the former and quite appropriate for the latter. A third consideration relates to what other employers are doing in the employment market surrounding the various plants.

A further consideration involves the nature of each plant's industry. For example, a conglomerate may have one plant engaged in machine-manufacturing and another engaged in food-processing. The typical pension plan in the machine-manufacturing industry may be different from the typical pension plan in the food-processing industry.

A final consideration would be the long-range plans of the employer with respect to the continued operation of a given plant. If his long-range plans call for sale of the plant, then it would be advantageous to set up as modest a plan as possible in the plant in question.

An offsetting consideration to all the foregoing are the expense and administrative difficulties of having a number of plans.

Question 3, which refers to the maintenance of different plans for hourly and for salaried employees, may be academic if union negotiations are involved. Otherwise, an employer may decide that, since wages of hourly employees vary only insignificantly from one employee to another, a flat unit-benefit plan (unrelated to wages) may be quite appropriate for hourly employees but would be inappropriate for salaried employees. Such a decision might dictate the introduction of two plans.

Also, an employer may want to provide a social security–integrated retirement plan to salaried employees (perhaps with employee contributions above the social security base wage) and, as a result of collective bargaining, a flat unit-benefit–noncontributory type of plan to hourly employees (even though some hourly employees' earnings are higher than the social security base wage). This would require two plans and, of course, would necessitate proof to the Internal Revenue Service that the salaried plan could "stand on its own feet" as a nondiscriminatory plan including salaried employees at all salary levels.

One of the problems created by two plans, one negotiated hourly plan and one salaried, is that not infrequently the hourly plan under a flat unit-benefit formula provides higher benefits than those payable to low-paid salaried employees under the salaried plan. One solution is to introduce a minimum benefit in the salaried plan which is the benefit that would have been earned in the hourly plan.

MR. GEORGE BRUMMER: In regard to question 3, when an employer has both salaried and hourly employees, distinctions between the two often depend on whether the hourly people are a union group or a nonunion group.

If they are nonunion, an employer may set up a separate pension plan for this group because he considers them a separate class of employees. Unfortunately, in so doing, the waters often become muddied after a period of time and distinctions between the hourly and salaried groups begin to disappear on an individual employee basis, with the result that in later years the employer does not really know to which pension plan an employee should belong or why.

If the hourly employees are unionized, the employer usually assumes that the union will take care of them, through negotiation or otherwise, and that he will take care of the salaried employees. Thus, a separate plan for such hourly employees is almost always preferable.

The biggest difficulty, which arises some years after an employer puts into effect two or more pension plans, is the problem of transfers. Many plan documents make no mention of transfers, and, even when they do, the applicable provisions are likely to be vague and virtually useless. In those rare instances where the language is complete and comprehensible, it covers only transfers into or out of a plan. I have yet to see a plan document with provisions which are directed to the situation in which an employee transfers to and from a plan, perhaps several times as his employee status changes, but without ever leaving his employer.

B. Has there been much success with multiple-employer plans (other than union-negotiated) for the small corporate employer? What types of funding vehicles have proved most effective? What special actuarial problems and solutions have been encountered?

MR. HARVEY J. SAFFEIR: Multiple-employer plans, other than negotiated plans, are rare. By multiple-employer plans, I mean a standardized kit where the assets and the liabilities are kept separate even though there is only one fund. Expenses, however, are shared.

At our firm we have only one such nonunion plan of this type. The

assets are in a common trust but isolated. The liabilities are kept separate. There is a sort of standard plan with a number of variables which the employer suggests. For example, he can pick a 1–2 per cent career plan or a $\frac{3}{4}$–$1\frac{1}{2}$ per cent career plan. Frankly, this plan has not been a glorious success. It has barely held its own over the past ten years in the number of company members. The reasons for this are several. First, individual agents are always sniping at the plan. Second, other competing plans in that industry are available. Third, it is hard to keep the proper balance as to flexibility. If the plan is too inflexible in design, there is dissatisfaction; on the other hand, if it is too flexible, whatever expense economies result from the packaging disappear.

As for the funding facilities, most larger banks have pooled funds so that the diversity of investment is made available even to the smallest firm. The insurance companies have been in the small pension business for many years.

It may be possible for companies to share mortality, turnover, and salary experiences, but a problem arises on gains; if Company A subsidizes Company B, there will be some dissatisfaction unless there is very strong central control. Perhaps such a plan is possible in organizations with strong central control, such as certain associations. In short, there does not appear to be much small multiple-employer business.

C. Has interest in variable annuity benefits among trusteed plans picked up in recent years? Has this interest been primarily from employers or employees? Have cost-of-living pensions served the needs of retirees better than variable annuities?

MR. SAFFEIR: I wish there were a whole series of words in the pension vocabulary for variable annuity, because, unfortunately, variable annuity has too many meanings. It is used for benefits which vary by the performance of an investment portfolio, or for those which vary by changes in the cost of living, or for those which vary by changes in the standard of living.

Ten years ago, practically all variable annuities were those which varied by the investment portfolio. The portfolio approach is weak in the following areas: (*a*) there is, of course, no parallel between stock market performance and the cost of living and (*b*) all the profit in the portfolio variable annuity goes to the employer.

There are still only a few variable annuity plans, all kinds combined, and the growth in numbers has been very slight. So far as managements are concerned, variable annuities are a curiosity item and management is certainly not for them. As for unions, they seem to prefer to go from

$3 to $4 to $5, and so on, sometimes sweetening-up the retired benefits on the way. I very much doubt that we have ten variable annuities of all kinds in our company today. They are very difficult to work with. Sometimes we see variable annuity options and CREF comes to mind. Those of my friends who are in consulting firms which specialize in public and denominational pensions tell me that variable annuity plans are more common there. I understand that Lutherans and Baptists have such plans.

In conclusion, possibly the variable annuity business will grow, but remember that there is only one source of money—the employer—and variable annuities are far down on his priority list. They are down there with dental insurance and eye-glass insurance, possibly because social security is sweetened-up periodically.

D. Proposals for standards of funding have been made by provincial, state, and federal government agencies.
   1. Is it possible to develop any standards for funding without controlling actuarial assumptions?
   2. What is the actuary's role in applying these standards?
   3. How have the funding requirements of the Ontario Pension Benefits Act been interpreted?
   4. Do funding requirements serve the interest of the plan participants?

MR. FRIEND: With reference to the first question, it is of interest to examine limitations already imposed by the Internal Revenue Service. One of the principal areas of concern of the IRS has been to prevent an employer from claiming excessive contributions to his pension plan as tax-deductible. To prevent abuse, the IRS has found it necessary to promulgate Revenue Ruling 63-11, which puts a floor on the conservatism of actuarial assumptions.

Other agencies of government have been concerned with the *adequacy* of funding. For example, while the IRS would not be critical of costs determined on an 8 per cent investment-return assumption (except, perhaps, in the very special circumstances of the application of P.S. 64), it is not unlikely that agencies concerned with standards of funding would regard such an assumption as a device to circumvent adherence to funding standards (even if past, short-term performance would justify this assumption on an experience basis).

Consequently, it is my position that the establishment of funding standards without imposing restrictions on actuarial assumptions will ultimately be unworkable. In regard to the application of these standards, if restrictions are imposed on both the funding standards *and* the actuarial

assumptions, the actuary's role is one of following the "rule book." In the absence of restrictions, his role is to serve the best interests of the employer, within the confines of whatever restrictions *do* apply. It is not inconceivable, for example, that the actuary would be expected to complete *two* valuations—one for IRS filing and another as proof of funding adequacy to another regulatory authority.

MR. M. DAVID R. BROWN: Perhaps the first thing to be said about the funding requirements of the Ontario Pension Benefits Act is a brief comment about the evolution of these requirements. The original act (1962–63) antedates the Canada Pension Plan and was, in some measure, an attempt to forestall the CPP by requiring employers of fifteen or more employees to establish a private pension plan meeting specified minimum requirements as to the benefit amounts, vesting, and, of course, funding. Because it was then seriously proposed to establish a government-sponsored agency to administer "bits and pieces" of vested benefits, to the point where a proposed set of transfer values was published for such benefits, it then appeared that all private plans would have to be bound, in practice, by the actuarial assumptions underlying these transfer value rates. However, when the CPP (and QPP) were proceeded with, the Ontario act was transformed into legislation which merely said that private plans which *were* established must meet specified requirements as to solvency, vesting and quality, and diversification of investments. The provision for a central agency remained in the act but has never been implemented, so that actuarial assumptions have not been influenced by the possibility of having to provide stipulated cash values for transfer at termination. At the same time, a most significant change in the funding regulations was also made, lengthening the maximum amortization period for unfunded liabilities from fifteen years to the longer of fifteen years or the plan anniversary in 1989.

As the regulations now stand, a private plan covering Ontario employees must submit, on initial registration and at least triennially thereafter, a cost certificate signed by a Fellow of the Canadian Institute of Actuaries, specifying the rule for computing current service costs, the amount of unfunded liability and a description of the program for its amortization, and a statement of any experience surplus or deficiency which has arisen since the last cost certificate, together with a description of how it is to be disposed of. (The regulations require that an experience deficiency be amortized over not more than five years from the date of its disclosure.)

The Pension Commission of Ontario has, in effect, asked consulting

actuaries to submit with renewal cost certificates what amounts to a summary actuarial report, showing employee data, actuarial assumptions and funding method, and a valuation balance sheet, including the basis of asset valuation. In my experience, the Pension Commission of Ontario has been extremely pragmatic in its administration of the regulations and obviously places considerable reliance on the judgment and good faith of the actuary signing the certificate. The Commission does try to satisfy itself that the assumptions are reasonable as a whole, and I understand that they have in only a very, very few cases refused to register or to continue registration because they were not so satisfied. If the report and/or certificate of the actuary leads to results which do not appear reasonable, the Commission may ask for some further explanation; evidently the need to do so has only arisen so far in circumstances where communications were incomplete or unsatisfactory, and all such cases have been resolved when the actuary supplied the further explanation or information asked for by the Commission.

Since the initial cost certificates for existing plans were generally based on a valuation as at some date in 1965, the Commission is now running into the first wave of "renewal" triennial cost certificates and is therefore having to consider for the first time the full implications of the distinction between unfunded liabilities and experience deficiencies. My own feeling from the beginning has been that this distinction will not prove workable in practice, but I cannot yet report to you how it is actually working out. I do know that, in our firm and some others, actuaries have been counseling plan sponsors to avoid the final-average-pay benefit design, since salary increases which temporarily outstrip the assumed salary scales will be considered as causing experience deficiencies requiring five-year amortization.

On the question of whether funding requirements serve the interest of the plan participants, I do not think there can be much debate if we are talking about the interest of the participants as a whole. Obviously, pensioners and older employees might get higher benefits from the same current contribution input if the plan could be unfunded or terminally funded. And, so long as the choice is left open, there will always be some plans which will operate on that basis. Our experience in Ontario suggests that there are very few situations where the imposition of funding requirements will result in the winding-up of a plan which had not hitherto met these requirements. Nearly all such plans have found the additional contributions necessary to meet the funding requirements, with only occasional examples of benefit cutbacks. I do not see how any other conclusion can be drawn from this kind of result than that the

funding requirements have served plan participants' interests, assuming that funding per se will serve their interests and, further, that the requirements themselves will result in greater intensity of funding over all.

MR. SHEPHERD M. HOLCOMBE: While I am not in favor of minimum funding requirements set by law, I do think we are going to have such requirements in the not-too-distant future. With this in mind we must give thought to how this can be accomplished and still leave some freedom for us to operate. While there may be deficiencies in the Canadian requirements, it seems to me that they have a very powerful tool to combat overliberal assumptions by requiring that losses be funded over such a short period as five years. Under this approach, assumptions do not have to be controlled specifically and yet there is effective control against the use of too liberal assumptions.

MR. J. BRUCE MACDONALD: It has been suggested by a number of speakers that the various Canadian pension benefits acts have imposed such severe funding requirements that Canadian consulting actuaries have started to use the unit-credit method of funding rather than the various level-premiums method of funding. I disagree with this contention on two counts. I cannot recall any case where we have found it necessary to change the funding technique because of the solvency requirements, nor do I think that the periods over which unfunded liabilities must be amortized are too short.

Canadian actuaries have always used the unit-credit method of funding to a much greater extent than their United States colleagues. The method does not have the potential tax disadvantages in Canada that it has in the United States. Further, the Canadian accountants have as a rule been much more flexible than their United States counterparts.

I should also like to comment on the background of the Department of National Revenue's rules, to which reference has been made. There are no rules in Canada that prevent discriminatory pension plans. As a result there have been many plans that provided substantial benefits for executives and shareholder executives. Many were never intended as a pension plan and were tax-evasion devices, pure and simple. The Department of National Revenue's rules were introduced to curb these abuses and to that extent are understandable.

Unfortunately, the DNR is now applying these rules, not just to so-called executive plans but to legitimate plans as well. Representations are being made by various organizations to DNR, and it is hoped that they will be able to differentiate between executive and regular pension plans in the application of the rules.

III. *Life and Health Insurance Consulting*

A. To what extent are consulting actuarial firms able to provide EDP systems or assistance for their life and health insurance clients? What advantages and disadvantages are found to exist in such instances?

MR. STUART A. ROBERTSON: Most life insurance companies, when undertaking a major systems overhaul, will benefit from the assistance of an outside firm. This field is not one for which the consulting actuarial firms are uniquely qualified; rather, the required help may be supplied by any one of a number of types of consulting organizations. In any event, the consulting actuary does have an interest in seeing that the building of the new system is done competently and that outside help is used, to the extent needed, wherever it comes from.

The firm with which I am associated decided to enter this field about a year ago, but only recently has it been able to accept major assignments, because of commitments for the development of our own actuarial programs. These assignments can range from just providing a systems analyst or programmer as an assistant for the client's staff to a complete systems design and implementation.

I am under the impression that just a few of the consulting actuarial firms—mainly the larger ones—are able to provide EDP systems or really major assistance with design and implementation of such systems. Nearly all life company actuarial consultants, on the other hand, if not providing such major assistance, can and probably do provide valuable service as advisers to the team charged with the responsibility for a new system. When a life company client is going through such a process, the impact of the systems change and its interrelationship with the actuary's areas of responsibility make his involvement quite essential.

One advantage, from the standpoint of the insurance company client, is the ready availability of competent staff for analysis and for programming, complemented by heavy actuarial experience. When the analysis and programming team does have experience with actuarial problems and with life insurance company operations, the very common problem attached to any systems development is diminished, that problem being the breakdown in communications. One notable disadvantage to the life company client is that there will tend to be a continuing need to rely on the consulting organization for servicing the system—updating it, accommodating new lines or activities, and the like.

There is also a possible disadvantage from the standpoint of the consultant. The system, when completed, may fall short of the client's

expectations. Possibly the client was oversold—not necessarily by the consultant but by someone else. Perhaps the problems associated with the new system result from errors or omissions on the part of the client's staff, or from the fact that the client does not have a competent staff to operate the system, or from a failure in communications. Whatever the cause, if you are creator of the system or if you have served as a consultant furnishing major assistance, you will have to be prepared to be blamed for every unsatisfactory aspect of the resulting system. I suggest that, if you are not equipped to do the job exceedingly well, or if you are not satisfied that the client has competent staff to perform effectively, you may be well advised not to accept the assignment at all.

B. Has excess loss (nonproportional) reinsurance become a practical vehicle for surplus protection? What kinds of companies are using it, and from what sources are they obtaining it? In what way are regular coinsurance and YRT retention limits affected?

MR. ROBERTSON: To prepare myself for this section of the discussion—and I admit to having been otherwise ill-prepared—I wrote to three friends in the reinsurance business. One is employed by a company which is, I think, unwilling to write this type of coverage; another is with a company that makes it available; the third is from a company aggressively soliciting such business.

My analysis of the excellent replies that I received, combined with some personal experience with actual cases, leads me to the belief that excess loss reinsurance is a practical device for surplus protection but only as a supplement to, not a replacement of, regular proportional coverage based upon reasonable retention limits. I do not expect to recommend to clients any increase in retention limits that is grounded on the existence of stop-loss coverage. In some cases, I may recommend increased retentions, because there are clients with limits I regard as too low; but such recommendations will essentially be independent of the existence of stop-loss coverage. It is probably true that such recommendations are somewhat more apt to be followed if the client has acquired or is acquiring stop-loss coverage, simply because the client will feel that he can proceed with greater confidence as a result of having that additional protection.

I repeat that the coverage is not a substitute for reasonable retention limits. More important, it is not a substitute for good underwriting. It can compensate for poor mortality that results from statistical fluctu-

ations but not for poor mortality resulting from excess liberality in selection of risks.

One of our questions asks what kinds of companies are using this coverage and from what sources they obtain it. Speaking from personal experience, one of my clients with a little over a billion in force has the coverage; another with about the same amount in force is now seriously considering bids they have received. From this and from comments of others, I gather that it is companies of this or smaller sizes that find an interest in having such coverage. If, in a typical example, a company has normal claims of, say, $3 million in a year and normal earnings of $1 or $2 million, it cannot help but feel some interest in a proposition that would relieve it of nearly all the additional mortality loss after an adverse fluctuation of, say, 15 or 20 per cent. One interesting bit of information that I received is that the interest is almost exclusively on the part of stock companies.

How widespread is the coverage, and by whom is it issued? As far as I can tell, there are no figures available; the information I have is based solely on guesses. As for issues by domestic reinsurers, I have been able to uncover very few actual contracts for stop-loss coverage (as distinguished from spread-loss or catastrophe coverage, the latter being quite common). One of my reinsurance friends estimates that there may be no more than a dozen contracts in all, including those that have been placed with Lloyd's. My own guess is that this is a little on the low side.

MR. A. HENRY KUNKEMUELLER: American International uses the excess-of-loss format extensively in the reinsurance of international group life and health coverages involving multiple carriers for one policyholder or group of policyholders. Coinsurance and YRT are also used, often in conjunction with excess of loss.

C. What techniques have been developed to provide buyers of individual life, health, or group insurance with measurements of relative cost between alternative products and/or companies? Have actuaries developed techniques for making such comparisons for home-office use?

MR. ROBERTSON: The insurance commissioner of the state of Washington has issued a regulation, which went into effect on the first of this month, requiring that a written comparison of cost be presented to the prospective purchaser whenever an insurance agent proposes replacement of an existing life policy with a new one. The regulation spells out the method of making the comparison. It follows, in a crude way, the

correct formula for computing cost of insurance per dollar of amount at risk. Its underlying formula is

Cost per dollar amount at risk

$$= \frac{P' - D + i({}_tCV) - ({}_tCV - {}_{t-1}CV)}{1 - {}_tCV},$$

where P' is the gross premium, D is the dividend, and ${}_tCV$ is the cash value at the end of the year for which the cost is computed.

The faults in this method include the calculation of interest on the fund at the end of the year rather than at the beginning and, also, the failure to discount the dividend for a year's interest. But the most serious shortcoming is in the rate specified by the regulation for i. It is to be the valuation rate of interest in the case of nonpar policies or 4 per cent for par policies.

The suitable interest rate, in my opinion, would be that rate which the policyholder could expect to earn on investments with safety of principal comparable to that associated with his life insurance cash value. Another weakness lies in the fact that the formula gives the cost for just one individual year or for a number of individual years, without bringing the results back to some single sum that can be directly compared with that for another policy. The regulation, incidentally, calls for the calculation to be made at three points—the current year, five years later, and ten years later. This should give a fairly good indication but still leaves the prospect without a basis for determining accurately the relative costs of different policies.

Any analysis made for a buyer of individual insurance giving him a really meaningful comparison of cost is time-consuming and expensive. For the average buyer, there would not usually be a potential saving that would justify the expense. In the case of very large policies, this may not be so. Recently, when pressed to do so, I reluctantly made a cost evaluation of quite a number of proposals in connection with partnership insurance involving very large amounts and covering two individual lives. We simply ran the proposed policies through our regular profit-study program, developing the type of study we regularly make for an insurance company client to determine profitability of policies. From this, we readily derived the cost to the buyer in terms of the difference, at point of issue, between the present value of expected net payments and that of expected returns. This is a perfectly valid comparison, provided the assumptions are realistic. In that connection, a difficult assumption to choose when dealing with insurance on just one life is the probability of

lapse. We must make a subjective decision after considering his motivation to buy the insurance, his plans with respect to retirement, and similar factors. The persistency assumption is an important one in such an evaluation, for a company exhibiting relatively low cost on one persistency assumption is quite apt to show high cost on another.

For three reasons, at least, I will, I believe, continue to feel reluctant to make such an evaluation for a prospective purchaser: (1) unless very large sums of insurance are involved, the cost of our service may appear excessive in relationship to its value; (2) the persistency assumption is important and must be arrived at subjectively; and (3) there is a potential conflict of interest, since life company clients may be included among the companies whose policies are to be considered.