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THE ACTUARY AND THE STATE

Moderator: ROBIN B. LECKIE. Panelists: EDWARD A. JOHNSTON, JOHN O. MONTGOMERY, RICHARD HUMPHRYS

MR. ROBIN B. LECKIE: The past decade has seen more turmoil in the environment in which actuaries function than possibly all other decades put together. And if 1980 is an indicator, we are into an even more uncertain period in the 1980's.

The work of the actuary is heavily impacted by our social and economic environment. The Society of Actuaries recognizes this and devoted the whole of its New York meeting to the subject of "Public Issues Involving the Actuary". Currently the highest priority of the Board of Governors of the Society is to develop the Society's response to, and perhaps accommodation to, inflation - our understanding of the problem and the techniques needed to respond in terms of product design and valuation and policyholder equity.

This morning we will explore the relative roles of regulation and the actuary in three countries - the United Kingdom, the United States and Canada. For the most part, we will look at valuation and solvency, although the panelists may touch on other aspects of the relationship pertaining to contracts, rate control and disclosure.

Very dramatic changes have taken place in the past 10 years in all three countries. The U.K. has brought in new regulation; however, heavy reliance is still placed on the professional judgment of the signing actuary, called the Appointed Actuary. Canada has, in a sense, reduced its regulation and transferred significant professional responsibility to the valuation actuary. The United States has recently approved for consideration a more dynamic valuation approach which would place more authority with the valuation actuary, although with less professional freedom than the other two countries.

The three countries have different approaches to guaranteeing cash values and investment restrictions, with corresponding impact on valuation and on solvency.

What is the professional role of the actuary in uncertain times? To a considerable extent, this is determined by the State - in a restrictive sense, by applying detailed regulation - in an open sense, by vesting more authority in the professional judgment and accountability of the actuary. As a profession, we opt for the second alternative. We feel the public will be better served through a more innovative industry and a more adaptive response to our environment and the particular circumstances of our companies. This is equally true for our work with employee benefits.

We are fortunate in having three leading government actuaries to present the contrasting pictures in their countries. They are, first, Edward Johnston, Government Actuary for the United Kingdom, next, John Montgomery, Chief Actuary and Deputy Insurance Commissioner for the State of California, and

finally, Dick Humphrys, Superintendent of Insurance in Canada. Their positions are not directly comparable because of the differing regulatory approach in the three countries. However, their influence in their countries and the respect they are held by their actuarial colleagues is comparable. I am delighted that each has agreed to be here today to assist us in our further understanding of our roles as professional actuaries and how we might respond to the varying conditions that may exist in the best interest of the publics we serve.

There will not be time for a general discussion at this session, however, there is a follow-up Discussion Forum this afternoon, with all three of our panelists attending. At that session, we hope to develop a more indepth insight into the differences that exist, and why, and what we should expect from the actuarial profession in the years to come.

I would now like to call upon Edward Johnston, Government Actuary for the United Kingdom.

MR. EDWARD A. JOHNSTON: It's a great honor to be invited to come across the Atlantic and address the Society, and I would like to start by bringing you the good wishes and greetings from the British Institute of Actuaries.

As to our insurance supervision, first I will give you a very brief description of the system itself - just enough so you can understand how and why the actuary plays the role he does. We don't have an insurance commissioner. The statutory responsibility for supervision lies with the Secretary of State for Trade, one of the ministers in our government. He will not be an insurance man. The work falls to his department, the Department of Trade, assisted by actuaries from my department, the Government Actuaries Department, which is a sort of consulting firm within the government. As Government Actuary, I carry personally professional responsibility for the advice given, but basically my actuaries and myself are working on the Department of Trade team.

We have over 800 insurance companies - about 280 writing life insurance, and many of those are subsidiaries of each other. We have a bit over 100 insurance groups actively in the life insurance market. All together, we have 110 people or thereabouts engaged in supervision; that includes seven actuaries. We ought to have ten actuaries, but I'm short, and if anyone is discontented with North America, they could see me afterwards.

Now, coming to the main features of the system, I'll just briefly describe these. Authorization - A company has to receive authorization before it can conduct insurance business, and when applying for that, it has to give a lot of details about its business plan - the new business it hopes to write, optimistic and pessimistic assumptions, premium rates, premium bases and so on. We don't control those, but we want to know that the company is being managed properly. Importantly, we want a statement from the actuary of that company that the capital of the company is sufficient to support the business that it expects to write in the first few years. We look particularly closely at the capital requirement which is, of course, controlled by the valuation basis.

Power of Intervention - This is the main thrust of regulatory work. We don't regulate premiums or terms of contracts in Britain. The Department of Trade's powers are to intervene in the affairs of a company if there is

a risk that it may be unable to meet its liabilities or that it may be unable to fulfill what the Act calls the "reasonable expectations of policyholders", and nobody has yet taken us to court about that phrase - reasonable expectations. Until they do, we won't be quite certain what it means. However, the point is that the Department of Trade can intervene in the affairs of a company, if things are going badly, before it becomes insolvent. The sort of action that it can take would be an order preventing that company from writing any further new business. There are also powers to require assets to be put into custody and so on. Intervention is a last resort. As a chest grand master once said, "A threat is more dangerous than its execution" and that is the way things are done. Our aim is to avert trouble before it happens.

Returns - We get very full Returns from the companies. It is a little bit smaller than a blank, I think, but we get quite a lot of information from them from which we can study the financial strength of the company. They amount to a balance sheet, profit and loss account, a detailed valuation report from the actuary, and a statement of business in force. As far as we are concerned, it is the actuary's valuation report which is the heart of the Returns. As you probably know, in Britain we do not value contracts on the premium basis. Liabilities are valued on bases which allow for the nature of the assets held at the valuation date, and the yield on them, and which are up to date as regards allowance for future mortality and expenses. We do not regard the valuation of liabilities as being divorced from the valuation of assets, although the actuary is not statutorily responsible for the valuation of assets.

In his report, the actuary has to set out a full description of the contracts he is valuing and a full description of the basis and methods used. This goes beyond the ordinary technical details of mortality tables and so on. In particular, he has to disclose the basis of any provision he has made for mismatching between the nature of the assets, including the currency and the term of those assets and the nature and term of the liabilities which he is valuing. Originally, our system relied on freedom with publicity which meant the companies were free to transact business with virtually no restriction provided that they made available accounts and actuarial statements. The idea was that the public would look at those statements. The present day Returns, which are pretty complicated, are the descendants of those statements. I think they are too complicated now to be of very much use to the ordinary member of the public.

Before the 1967 Act, the Department of Trade had very little powers of intervention. A company had to be insolvent before the Department could take any action. However, for half a century or so before then, the Returns were scrutinized in the Government Actuaries Department and points were taken up with the companies. That system worked pretty well - I think a tribute to the quality of company management, which was largely dominated by actuaries, and to the cohesiveness of the small profession. Also to the fact that it was very difficult in those days to start a new life company, not because of restrictions but for technical and marketing reasons which evaporated during the 1960's with the invention of new forms of contracts. Since then, product innovation has been particularly rapid, and this has enabled new companies to move in - more market oriented companies - and the whole scene is much more open.

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The 1967 Act and the 1973 Act extended the Department of Trade's powers to their present level and also introduced the need for the Appointed Actuary. A company now has to appoint an actuary who has to be the actuary to that company the whole time. Previously, all that was required was an actuarial report at specified intervals. That's quite an advance, but even now the Act says absolutely nothing about what the actuary is to do in between valuations.

Now, I ought to mention here the rash of life insurance insolvencies which we had in 1974, which was the first such outbreak this century. It was quite a shock. We figured that the system which had been set up by the '67 and '73 Acts should have been able to prevent them. Of course, it hadn't gotten going by then, so the result has not been further legislation, though it resulted in a very significant strengthening of professional rules. The main statutory result was the setting up of the Policyholders' Protection Board, which is a statutory board which takes over insolvent companies. It is empowered to levy the insurance industry in order to partially support the benefits under policies of insolvent companies. The fifth heading, the EEC (European Economic Community) Directive is a very complicated matter which I will deal with if there is time. It is making some very interesting developments, but it is probably not altering the basic nature of the actuary's responsibility.

UNITED KINGDOM

Authorization
Intervention
Returns
Policyholders' Protection Board
EEC Directive

Now coming on to the Appointed Actuary, he has been required since 1973, although of course, companies have had actuaries since time immemorial. His statutory role is investigative and advisory. That is to say, we don't require the actuary to run the company. He may, in fact, be a manager, but we require him to advise the company on the financial consequences of the things which they are about to do. In practice, the Department of Trade relies very heavily on that advisory role. If any question arises as to a company's business, the Department will expect the company to obtain advice from its Appointed Actuary to disclose to them what that advice is and to act on it, and probably we would have been discussing with the actuary what sort of advice he should be giving.

The Act, as I remarked, says very little about the Appointed Actuary's duties, but the profession has a lot about them in its guidance notes. They contain three points which I regard as being of major importance. The first of these is that although valuations have to be made only at specified intervals, the Appointed Actuary must take all reasonable steps to ensure that he is at all times satisfied that if he were to carry out such an investigation, the position would be satisfactory. That is a very far reaching requirement, and it goes significantly beyond the statutory requirements. I think that is in itself an interesting situation that the profession is requiring something of its members and by implication, therefore, is enforcing this requirement on insurance companies, but there is no such requirement in the statute. Of course, this can only be done if the company provides its actuary with information on all significant happenings and many routine ones.

The second point, which is actually the third point in the chart, is that the actuary, although strictly speaking working for his company, has responsibilities and obligations to the Department of Trade by reason of his statutory duties. If, in spite of his advice, the company follows a course which he considers dangerous - and the definition of dangerous is that he wouldn't be able to give the statutory certificate which he is required to do by the regulations - he has to advise the Department of Trade after so informing his Board of Directors. In other words, he has to go to the supervisory authority over the heads of his company. This is an ultimate deterrent. It has never yet been used, and I hope it never will be. My experience, and this is what I tell Appointed Actuaries, is that trouble can be averted if one catches it soon enough. Our system of scrutiny, contact and discussion is aimed at doing that. But the fact that there is that requirement means that the insurance company has to take its actuary's advice seriously, and they can't just brush him to one side. They know that if they do that, they will have the Department of Trade to deal with.

The third requirement is that someone who is offered a job as Appointed Actuary has to ask his predecessor, to quote from the guidance notes, "whether there are any professional reasons why he should not accept the appointment". When we leave so much to the actuary's discretion, there's obviously a risk that a company will try to change actuaries for improper reasons. The actuary has a lot of freedom to decide on his valuation basis, and it is his valuation basis which decides how much capital the company requires. So you can well imagine the company promoter who might be looking around to find an actuary who took fairly relaxed views on this. This is something which obviously can't be allowed. We can't stop companies from changing actuaries - there obviously are many circumstances in which they may wish to do so. What we can do, with a very fair measure of success, is to stop them from getting away with anything by changing actuaries. In doing that, we have to work together with the Institute.

The Institute's guidance notes also define the position which the actuary should hold in the company by saying he must have right of direct access to the Board of Directors, and in the course of my work as I try to make this system work, I try to ensure that the company is so run that the actuary is normally in attendance at the Board meetings. Thus, he doesn't have to do anything very much out of the way if he wants to bring some point to the attention of the Board.

Also, I like it to happen that the actuary will sit on any investment committee which the company has so that he'll have a chance to put his word in on any question of investment policy.

The remainder of the guidance notes set out things which the actuary ought to know and the considerations which he ought to take into account. It is fairly standard stuff, textbook stuff, but they stop there; they do not tell him what basis he should use. That is his freedom and his reponsibility, and of course, it is up to the Department of Trade to decide whether the basis which he has used is adequate and strong enough for their purposes.

We are currently working on regulations which will set a statutory minimum level on actuarial reserves. Up to now, we had no statutory requirements at all. It's been purely a matter of the professional standards - uncontrolled professional standards, and we did have a little trouble with that in those insolvencies which I mentioned in the last decade. These regu-

lations will prescribe the minimum standard. Actuaries can continue to value on any basis they like, provided they give us a really convincing demonstration that the total reserves for each fund or sub fund exceed the minimum. We define that minimum very briefly as a net premium valuation with allowance up to a certain rate, the interest basis being determined by the market value of the assets less a margin.

Pulling all these together, our supervision system does not attempt to regulate the premium rates, the terms of contracts, the marketing methods, or the method of organization of the company apart from saying that it has to have an actuary, which is pretty elementary for a life company. The sort of question he asks is, is the company solvent? If it is solvent, does it look as though it is going to stay that way? Is it so managed that with profit, policyholders are receiving fair treatment? Is its investment strategy suitable in principle for the type of liabilities which it has taken on? Is its capital, which may be held as a margin in the valuation basis, adequate for the business which it is undertaking?

These are questions which the management of any well run company ought to have continually in mind, and the company's actuary ought to be right at the heart of any consideration of them. That is just a matter of ordinary good management, and it used to be traditional in Britain where actuaries have traditionally been very strong in company management and where they've been concerned with the total financial situation of the company, not merely with the calculation of its liabilities.

The Appointed Actuary's role runs with the grain of the way that a good office is managed in Britain. It adds another dimension to the actuary's responsibilities, but doesn't materially change the area that he has to concern himself with or the work that he has to do. That extra dimension is supported by his professionalism. The actuary is not independent like an auditor, he would be of no use to us if he was independent, but he is a member of a profession which expects its standards to be maintained, and we rely on his bringing those professional standards to his work, if necessary, despite some commercial pressure to do otherwise. That is where we have to work together with the Institute to ensure that improper pressure is frustrated. I say improper pressure because we are not against commercialism as such.

APPOINTED ACTUARY

Required Since 1973
Investigative and Advisory
Responsibilities to Co. Board and DOT
Institute's "Guidance Notes"
Consultation Before Critical Decisions

The advantages of this system from the point of view of the industry are obvious. It leaves them free of a lot of detailed regulation, and one has only to compare our industry with those on the Continent of Europe, if any of you have tried doing business there, where things are very tightly regulated. I would claim that the public is getting a better insurance industry from our system.

All the same, the insistence on thorough actuarial responsibility of the company finances with full responsibility given to the actuary should ensure

that the company will be financially sound. It is an advantage from our point of view, of course, because it ensures that the company is sound with a lot of the work being done for us by the company actuary. We don't have to employ a lot of civil servants to do it. In any case, the company actuary is much closer to things than we can possibly be. It is important to us that the actuary should be a senior member of the company's management. He should be in a position to influence decisions before they are made and not afterwards.

As my fellow panelists will know, the worst problems that the supervisor has are where somebody has done something silly. They have issued a contract with some dangerous clause in it. They have bought some investments which have gone bad and once they have done that, you cannot undo it, and that is where the problems come from. The whole aim of our system is that less should go wrong. We have to put it right afterwards, but we do not want it to go wrong in the first place.

As Government Actuary, I have a special responsibility for seeing that this actuarial system is clean, oiled and in working order. I have to organize and maintain the necessary cooperation between the Department of Trade, our own actuaries who are working with the Department of Trade, and with the Institute and Faculty of Actuaries, and we all have to keep very close to each other. It is facilitated, of course, by the fact that Britain is a small country - we are geographically very close to each other, and we make the most of that. The system is not infallible, but it does seem to work a great deal of the time, which I would claim is not bad in an imperfect world.

Finally, I would like to quote some remarks from a speech by the Chairman of a certain insurance company made in 1871. That company is still going, it is a well-known Scottish company, and these remarks were made just after the first life assurance act that we ever had:

> "You were aware that the Life Assurance Companies Bill passed by Parliament last year has made considerable alterations with regard to the accounts of assurance societies. But this is really, for well-established offices such as ours, a very beneficial measure. It throws great obstacles indeed in the way of those societies which are got up for taking in the public."

That, I hope is still the characteristics of our system.

MR. JOHN O. MONTGOMERY: This is a very auspicious time for insurance regulation in the United States, a time when decisions are being forced on regulators as to what course to take. Last September at an NAIC Zone 6 meeting in San Diego a number of Commissioners representing the Executive Committee of the NAIC were present and they expressed views that perhaps the Canadian or British forms of regulation should be reviewed to see if insurance regulation in the United States could be simplified and made more flexible.

From the chart of comparative figures, it becomes obvious that for U.S. regulation to achieve the quality of regulation existent in Canada, if the actuarial staff is a measure of that quality, either actuarial staffs of most state insurance departments would have to be expanded or some other

alternatives pursued. One possible alternative is to pool resources through a central committee such as the present technical subcommittee of the NAIC which reviews valuation and nonforfeiture value regulation, and to augment the permanent staff of the NAIC Central Office to provide certain technical control services to facilitate the operation of the technical subcommittee. I believe that in the next year or two we will see some action in this area through the NAIC.

COMPARATIVE FIGURES CONCERNING LIFE INSURANCE REGULATION

Item	U.S.	CA	NY	Canada	U.K.
Millions of Population (Latest Figures)	230	24	19	24	56
Life Insurance In Force - End of 1979 (Billions of U.S. Dollars)	3222	312	258	322	289
Ordinary Life Insurance Purchases in 1979 (Billions of U.S. Dollars)	324	37	20	26	?
Professional Actuarial Staff in Regulation (1981 Yearbooks)	61	4	14	26	14

The principal reason for the existence of the National Association of Insurance Commissioners is to promote uniformity of regulation among the various states. That this is an extremely difficult task one has only to observe the lack of uniformity now existing. However, a move towards federal regulation could wipe out the progress in certain states made towards stimulating the growth of new products and could result in difficulty in providing for special insurance products required by special conditions, physical or legal, in various jurisdictions.

As a brief background, the first insurance departments were organized in Massachusetts and New York in the 1850's, and by 1869 35 states had such departments. In 1870 the National Convention of Insurance Commissioners, later to become known as the National Association of Insurance Commissioners, was organized. In 1906 extensive criticism of extravagance by the insurance companies in New York brought on the Armstrong investigation which resulted in the present form of the New York Law with respect to expense limitations. No other state has followed New York in enacting such legislation. So much for history.

New York, because of the concentration of large insurance companies there, has long had a very complex system of regulation requiring far more concentration on auditing and prior approval of policy forms. For comparison, the New York Department has nearly three times as many employees as the California Department and a professional actuarial staff for life actuaries seven times that for California and for casualty actuaries twice that of California. Several other states from time to time have actuarial staffs as large as California, but none has ever come close to the size of the New York Department.

There is a considerable variation in regulation from state to state, but the basic features of regulation in the United States are:

(a) The standard valuation and nonforfeiture laws defining standards for the calculation of minimum reserves and minimum nonforfeiture values. All states and jurisdictions have now enacted some form of the 1976 amendments, and most states are busily working on enactment of the 1980 amendments which contain dynamic features allowing for automatic changes in interest assumptions and the introduction of new NAIC approved mortality and morbidity tables.

(b) A Standardized Annual Statement Reporting Blank (the NAIC Blank).

(c) Prior approval of policy forms, except two states do not require prior approval of life insurance policy forms.

(d) Regulations or laws concerning the type of assets permissible and specifying the rules for maintenance of a mandatory securities valuation reserve. There is nothing in the law that relates assets to liabilities, however.

(e) Legislation defining minimum surplus, which varies considerably from state to state and needs revision to provide for minimum surplus defined by the nature of the risks involved in the operations of each insurer's business.

(f) Financial ratio surveillance systems maintained by the NAIC and which are designed to indicate or call attention to the regulators unusual transactions or operations and are not necessarily indicators of financial weakness. Most states now use these ratios as a basis for inquiry.

(g) Certification of the adequacy of reserves by an actuary. The need for this arose at the time the Financial Ratio Surveillance System was being set up when it became obvious no financial ratio could accurately replace an Actuary's opinion of the adequacy of the reserves. However, most actuaries do not certify that the assets supporting such reserves are of such a nature as to provide complete support. This is a problem area noted in recent insolvencies and is one of the reasons the NAIC is examining financial ratios related to the adequacy of investment income to meet statutory reserve interest requirements, and also the analysis of cash flow. These studies are ongoing in the NAIC Task Force on Surveillance.

BASIC FEATURES OF U.S. REGULATION

Standard Valuation and Nonforfeiture Laws
Standardized Annual Statement Reporting Blank
Prior Approval of Policy Forms
Regulations or Laws for Permissible Assets
Mandatory Securities Valuation Reserve
Minimum Surplus
Financial Ratio Surveillance Systems
Certification of the Adequacy of Reserves by an Actuary

Federal legislation and regulation in the United States is a source of increasing concern to the actuary, especially with respect to Federal Income Taxation, rulings of the Securities and Exchange Commission and rulings of the Labor Department concerning the Employee Retirement Income Security Act. All of these result in certain products either being made more available or more restricted in availability. Certain types of insurance could be written at much more economical rates were it not for the structure of Federal regulation and taxation. Examples are earthquake insurance, professional liability insurance, and many forms of health insurance.

FEDERAL LEGISLATION AND REGULATION

Federal Income Tax
Securities and Exchange Commission
Employees Retirement Income Security Act

Another area of regulation in the United States pursued on both the state and Federal levels concerns unfair trade practices, including disclosure requirements and regulation of replacements. There is a wide variety of opinion among the states as to how these should be handled, and the actuary must be aware of these differences.

Reinsurance contracts are often a source of regulatory action in the United States. The actuary should be certain that the company accepting reinsurance is an admitted reinsurer in the state of valuation. The reinsurance contract must be a bona fide contract of reinsurance and not just a front for a loan. Many regulators will question such contracts and possibly deny credit for such reinsurance unless it does provide for some element of risk. Of particular importance in reinsurance contracts is the matter of the return of reserves on recapture of the reinsurance which should be accomplished through a provision for a direct guaranteed release of reserves rather than through manipulation of an experience refund formula which might result in no such direct release.

There is a considerable body of material in the Examiners Handbook and Insurance Accounting Practices & Procedures Manuals published by the NAIC which should be reviewed by any actuary involved with regulatory activities. These books contain many details of subjects only mentioned briefly here.

There are a number of lines of business written in the United States which have some form of regulation of premium rates, such as credit life, credit disability, individual health insurance (not all states), and various lines of casualty, indemnity and liability insurance. All of these lines involve actuarial activity, both on the part of the regulator and on the part of those writing such business. There is considerable variation from state to state as to how such regulation is conducted. The actuary representing an insurer for any of these lines of business must be familiar with each state's regulations.

California traditionally has never had prior approval of policy forms since it has been viewed as an additional bureaucratic expense useful only about 10% of the time. If a controversial new product is introduced in California, the Department of Insurance becomes aware of it either through the insurer writing such products, the competitors of such insurer, or a financial examination or surveillance test showing a sudden surge of new business (if

the plan is a sales success). If the Department believes the product is not in the best interest of the consumer or that it may lead to company insolvency, it often is able to exert sufficient pressure or arguments so as to cause modification or withdrawal of the product. In many cases a modification of the product is all that is needed to make it salable. As a result, more product innovation has been accomplished in California than perhaps all of the other states combined. This does not mean that new products are not given careful scrutiny. They are, including demonstration of the adequacy of the premium scale proposed to support the benefits promised including guaranteed surrender values. This is not rate regulation but merely a demonstration of the potential for solvency (or insolvency) if large amounts of such proposed business were to be written. Optimistic assumptions must be balanced by assumptions of the worst possible conditions in developing such projections. The Department has developed minicomputer procedures for verifying such projections and perhaps replacing some assumptions by more conservative assumptions. Rather than utilizing its computer faculties for primarily annual auditing functions (such functions are accomplished in the triennial examination procedure), the California Department is utilizing its computer resources to develop a more comprehensive surveillance analysis to reveal areas of difficulty for those insurers where such closer attention is needed.

OTHER AREAS OF REGULATION

Unfair Trade Practices
Reinsurance Contracts
Premium Rates
Policy Forms

In review, the principal areas of actuarial involvement with regulation in the United States are:

(1) Verification that the reserves are at least equal to in the aggregate those specified by minimum statutory standards.

(2) Verification that the refund values payable are at least equal to the minimum values payable by statute.

(3) Certificate of Actuarial Opinion on the overall adequacy of the reserves, not just their statutory sufficiency.

(4) Preparation of Annual Statement information in accordance with the Instructions to the NAIC Annual Statement Reporting Blank.

(5) Calculation of the amount payable for Federal Income Tax.

(6) Preparation of the 10K Report for the S.E.C.

(7) Completion of the reports required by the Labor Department for ERISA.

(8) Completion of special experience reports for various lines of business for which such reports are required.

ACTUARIAL INVOLVEMENT

Reserves to Meet Minimum Statutory Standards
Minimum Nonforfeiture Values
Certificate of Actuarial Opinion
Preparation of Annual Statement Information
Federal Income Tax
10K Report for the SEC
Reports for ERISA
Special Experience Reports

In conclusion, it appears at the present time that the primary task of the regulator is, as it always has been, to determine if an insurer is operating so as to be able to pay the benefits it has guaranteed to pay at the time they are payable. This is really the meaning of solvency. In the United States the statutory definition of "minimum surplus" must be revised to recognize all of the risks that an insurer encounters. It is in this area that probably the most legislative and regulatory effort will be made during the 1980's.

MR. RICHARD HUMPHRYS: In establishing and operating any system of supervision of life insurance companies, the essential purpose and intent is to find the answer to the question "Can the company meet its obligations?" or, more precisely, "Are the assets of the company, together with the expected investment income on those assets and future premiums from existing business, sufficient to enable the company to meet expenses of administering that business and the claims arising out of it?" Setting aside extreme cases, there is no absolute answer to this question. It is and must be a matter of opinion since it involves future investment income, future expenses, future claims. Further, it must be an actuarial opinion since the heart of the actuarial discipline consists of the training and techniques needed to solve the problems involved.

So, having identified the problem, the next question is "Whose opinion and how do you get it?" Obviously, there are a variety of approaches, and I would like to discuss the policy decisions taken in Canada in this respect over the years. In relation to the involvement of the company actuary, the theme of our discussion this morning, I classify the Canadian approaches into three stages which I will refer to as level one, level two and level three.

Under level one, minimum involvement of the company actuary, the basic approach is for the regulatory legislation to specify the bases and methods to be used in calculating the reserves for business on the company's books. The job of the company's actuary is to make the calculations in accordance with the prescriptions laid down in the legislation and perhaps to certify that he has indeed done so. However, the actuary is not required to express an opinion as to whether the bases and resulting reserves are appropriate or adequate. Neither is the actuary asked to express any view concerning the company's assets, either as respects their quantity or their appropriateness. This general approach seems to leave it to someone else, the auditor, the accountant or the regulatory authority, to look at the estimate of the company's liabilities on the one hand, the list of its assets on the other and to form the opinion that is being sought.

Clearly, the determination of actuarial bases to be put into the legislation requires participation by an actuary or by actuaries. Some legislatures may turn to actuaries in government employ, others may seek the views of a committee of the industry, still others may seek the views of consulting actuaries. It would seem, however, that this approach requires that the bases prescribed be generally conservative since they have to apply to all companies. One can only accept the approach in principle on the assumption that reserves calculated according to the prescribed bases are almost certainly going to overestimate the liabilities. They must be adequate for everybody, so presumably they would be excessive for some.

This approach, level one, is quite common in North America and was the approach used in the Canadian federal legislation until the late 1920's. It worked well enough in a generally stable environment where the interest rates were reasonably predictable and where there were no great pressures arising from liquidity demands for cash values or policy loans or rewriting of old policies or from competition for savings. The general effect was to produce strong reserves and to bury some surplus in the actuarial reserves.

Relying on the regulatory authority or the accountants for testing the assets against the liabilities as calculated by the actuary required some prescription as to the valuation of the assets. On the Canadian scene, the general approach was to use the outstanding balance for mortgages and market value for other assets. Again, this was conservative provided that the interest rates were not fluctuating too widely.

The system, although it worked reasonably well, clearly had a number of defects. It was a broad-ax technique forcing everybody into the same mold, probably distorting to some extent the emergence of surplus for payment of policyholders' dividends or shareholders' dividends and perhaps even leading to distortion in establishing cash values and premium rates since operating actuaries would tend to look at the statutory prescriptions concerning reserves and build their premium structure around that. This would be a kind of backwards approach where the premium structure is modified by the reserve basis rather than the reserves being calculated in the light of the terms of the contract. It is an approach that does not do well in the kind of environment we see today.

LEVEL ONE

Bases and Methods Prescribed
Calculation but no Opinion
Assets - Generally Market Value
- Little Involvement by Actuary

My level two approach is one where the choice of actuarial bases is left to the actuary rather than prescribed by the regulatory statutes but still without any specific responsibility on the actuary to look at the assets and form an opinion concerning the ability of the company to meet its obligations. This system, level two, or something close to it was in effect in Canada from the late 1920's to the late 1970's. In operation, although the legislation listed a number of mortality tables and a rate of interest that could be used without further question, the way was left open for the actuary of each company to seek approval of other bases and other rates of interest if he thought that those referred to in the statute were inappropriate. Furthermore, he was required to include a certificate to the effect that, in his

opinion, the reserves he calculated made good and sufficient provision for the liabilities of the company under its policies in force.

Clearly, level two puts a good deal more responsibility on the actuary than the level one approach. In the Canadian adaptation, although the actuary had to seek approval for tables not listed in the Act, this was rare since there was a wide variety of tables listed and the list was kept pretty well up to date by adding important new tables as they were published. In any case, any actuary that had a reasonable case could expect to get approval for the use of the bases that he desired. Great emphasis was placed on the actuary's certificate, and this was made part of the annual financial return.

Although the approach as used in Canada did not specifically ask the actuary to test the asset portfolio against the reserves that he calculated, still it is strongly implied that the actuary, in choosing bases that he thinks are appropriate for his company, would have to have regard to the circumstances of the company. He would have to look not only at the general market rates of interest but at the particular circumstances of the company to see what rate it was earning. Nevertheless, it was left to the accountants or the supervisory authority to complete the opinion, i.e., to decide whether the resources of the company as represented by its assets would enable it to meet the liabilities as calculated by the actuary. During this period, the approach to asset valuation was changed somewhat in the late 1940's. Mortgages were still accepted at outstanding balance, but government bonds were included at amortized values instead of at market. All other securities and real estate were taken at market. Some relief was provided from the vagaries of the operating securities market by permitting some averaging of market values.

Generally, this system worked in a satisfactory way but in a more or less stable environment. Clearly, it does not lend itself to the important question now foremost on our minds, the matching of assets and liabilities in interest requirements and maturities. The basic philosophy seemed to be that if you have a lump of assets with a certain realizable value and a lump of liabilities with a certain discounted value and the first exceeded the second, then you were alright. The fact that this approach does not measure the expected interest revenue and that the market value does not necessarily represent the realizable value on a large portfolio is left to one side, under the general philosophy that the market values are independent of manipulation and probably represent an adequate approach to the valuation question. Always in the background, however, was the concept that the reserves were probably on the safe side and that there was additional capital and surplus on hand.

LEVEL TWO

Valuation - Responsibility of Actuary but
Without General Regard for Assets
Actuarial Certificate - "Good and
Sufficient Provision"

Level three I would identify as a system whereby the actuary of the company chooses bases for valuing the company's policies that are appropriate to the business being valued and the circumstances of the company; where he looks at the asset portfolio of the company and where he gives his professional opinion not only that the reserves calculated are an adequate representation

of the liabilities but, in addition and perhaps more importantly, he states an opinion that the resources of the company are sufficient to enable it to meet its obligations without deduction or abatement.

This approach, level three, or something fairly close to it, has been in effect in Canada since 1977. Perhaps I could call it level two and a half. Under our present approach, the actuary is indeed required to choose bases that he considers appropriate to the circumstances of the company and the business being valued. This brings out very strongly that the actuary has to look at the nature of the company's assets and its interest expectations in order to be satisfied that the bases he has chosen for valuing the liabilities are appropriate to that company. He is also permitted to defer acquisition expenses where he thinks that they are properly deferrable and where he is satisfied that there are enough margins in the future premiums to permit the amortization of these expenses without interfering with the company's ability to meet its contractual liabilities. He must also indicate, if he is valuing participating business, whether or not his concept of the appropriateness of the reserves and the adequacy of assets are in any way based on the expectation of a change in the dividend bases.

The legislation does not specifically ask the actuary for a solvency certificate, but it comes pretty close to it, and it is my feeling that probably we are headed in that direction if no serious obstacles occur along the way.

LEVEL THREE

Valuation Bases and Methods Responsibility of Actuary "Appropriate to the Business Valued and the Circumstances of the Company"
Asset Portfolio Taken into Account
Actuarial Opinion - "Adequate and Appropriate"
Solvency Certificate

It is of interest to note that, although this system, what I call level two and a half, has been in effect only since 1977, the fact is that a full level three system was on the scene in Canada in certain areas as early as 1919. At that time, assessmentism had pretty well run its course in the U.S. and Canada, but there were still outstanding problems in the field of fraternal benefit societies. These societies issued the so-called "open contract" and many of them were operating without actuarial reserves calculated on what was then referred to as the "legal reserve" basis. In 1919, an amendment to the Canadian federal legislation required fraternal benefit societies to produce actuarial reports by fully qualified actuaries. Where a new fraternal society applied for registration (this would apply mostly as respects fraternal societies from the United States wishing to enter Canada), the actuary was required to produce a certificate with respect to each benefit fund to the effect that the assets in the benefit fund, together with future premiums, were adequate to permit the company to pay all the benefits under the policies without deduction or abatement. This was a full solvency certificate.

It is also interesting to note that apparently the administration of the day lost its nerve when it came to the ongoing financial reporting since after initial registration, there was no requirement for a solvency

certificate. Instead, the actuarial report was required as respects the liabilities although the actuary was given free rein in the choice of bases. The approach adopted in 1919 as respects fraternal benefit societies still applies.

A further development in the 1977 change was the requirement that each company name a "valuation actuary" by resolution of the Board and that the Superintendent be informed if the valuation actuary was, at any time, changed. This was intended to make sure companies don't change valuation actuaries casually or merely to escape from a rigorous view to a less rigorous view without the supervisory authorities being thoroughly informed as to what is happening. It was also an attempt to raise the stature of the valuation actuary to something closer to that of the company's auditor and give him a degree of independence. Furthermore, the company's auditor was specifically permitted under the legislation to accept the reserves as calculated by the actuary as an adequate representation of the company's liabilities as respects policies in force.

So what does the future hold? Well, clearly in our present environment, the question of matching of assets and liabilities both in interest spreads and maturities has become a major problem. This has arisen not only because of the volatility of interest rates but also because of the pressure on some companies for cash values, loan values and conversions. Furthermore, in Canada, the life insurance companies are in head-on competition with other savings institutions for the savings dollars of the public. They have to compete at the extreme limit of the interest rates and none of them are in a position to establish reserves on these deferred annuity products containing much margin below the contractual interest rate. Thus, we are no longer in the position where a company can comfortably put away some surplus in the actuarial reserves. Instead, the reserves have to be calculated close to the bases used in setting the premium structure and the company has to rely on its capital surplus for the safety margin needed. The kind of fluctuations that a company faces and the pressures on it because of the rapid changes in interest rates, because of the liquidity pressures that can be so easily generated and because the increasing sophistication of policyholders has raised to a hitherto unknown level the risk exposure of life insurance companies and thus has greatly increased the importance of an adequate level of capital and surplus.

I think that the next round of policy determination will have to emphasize the problems of matching and the problems of adequate capital and surplus. Some of the contingency margins that we have been thinking of over the years relating to variation of mortality from expectation now seem to have been dwarfed by the magnitude of the problems relating to liquidity exposure, matching of maturities and matching of interest rates.

Already we have started to some degree down this road by important changes in the approach to the valuation of assets. The question of market values has been pretty well set aside as being relevant only in the sense of determining that a company has some reserves or margin to protect it against possible losses on forced realization of assets.

Generally, as respects asset valuation, we are looking at amortized values for debt securities, outstanding balance for mortgages, and we are looking for some reserve measured by the difference between the market value of the portfolio and the book value. At the present time, we are calling for 10% of this difference or 1½% of the book value, whichever is larger.

As respects investment in equities, we are attempting to bring into the investment income some part of the unrealized gains or losses in a manner that will reflect this type of investment into the rate of investment yield so that the actuary, in choosing his valuation bases on the liability side, will have a reasonable reference to what is expected by way of performance of the asset portfolio.

One final comment on the role of the supervisory authority. You will have noted that I made references in one or two places to approval by the Superintendent of Insurance of bases chosen by the actuary. This is not intended to substitute the opinion of the Superintendent for the opinion of the actuary. It is intended rather to control the fringe areas, i.e., the possibility of outrageous assumptions or assumptions that may be seriously dangerous to the policyholders. Other than this, the role of the supervisory authority is one of keeping closely in touch with what is being done, with how the professional actuaries are carrying out the responsibility that has been placed upon them and being in a position at all times to inform the legislature whether this delegation of responsibility is working in the public interest to produce a satisfactory level of protection for the policyholder.

THE FUTURE

Matching of Assets and Liabilities
Levels of Capital and Surplus
The Role of the Superintendent