

**RECORD OF SOCIETY OF ACTUARIES  
1978 VOL. 4 NO. 2**

**NEW ACTUARIAL STANDARDS FOR INSURANCE COMPANY  
REPORTING IN CANADA**

*Moderator: ROBIN B. LECKIE. Panelists: KENNETH T. CLARK,  
DANIEL J. KUNESH, MICHAEL ROSENFELDER*

The new Insurance Acts in Canada provide considerable flexibility to the "Valuation Actuary" in establishing valuation assumptions and methods for use in the statutory and public statements. The Canadian Institute of Actuaries is developing standards for the guidance of its members. These involve a number of new concepts which are compared to the current GAAP and statutory reporting requirements in the U.S. and to the requirements in the United Kingdom.

The valuation and financial reporting considerations are developed using the following "Case Study":

**COMPANY** - A medium size stock company in its own country only writing both par and non-par individual insurance and non-par individual annuities.

**MANAGEMENT** - The President, a non-actuary, was recruited to the job two years ago. He allows the actuary considerable freedom but it is known he would like to have a good statement and be able to make a significant increase in shareholder dividends.

**ASSETS** - 50% of the assets are corporate bonds of varying quality, the balance are mortgages. Both are held on the books at amortized values. Market value of bonds are 95% of book values. In the previous year market values were 98% of book values.

**INVESTMENT INCOME** - Pre-tax portfolio interest is 7%, new investments have been yielding 9%. These are up from 6 3/4% and 8% respectively in the previous year. There have been some realized losses during the year.

**FUNDS** - The company maintains a separate participating fund and transfers 10% of the distributable participating profits to shareholder earnings. The balance of the profits are distributed to the participating policyholders. A substantial increase has been made in participating dividends during the past year.

**ACTUARIAL LIABILITIES** - 50% are non-participating, ordinary insurance valued in the past using preliminary term 58 CSO 3½%; 25% are participating ordinary insurance valued using net level premium 58 CSO 3%; 25% are non-participating individual deferred annuities valued at 3½% sinking fund.

**EXPENSES** - First year commissions are 50% of premiums, other direct first year expenses are 50% of premiums, indirect first year expenses are 75% of premiums. Renewal unit expenses have increased in the past year.

**MORTALITY AND PERSISTENCY** - Both have been slightly more favorable than industry experience.

MR. ROBIN B. LECKIE: Mike Rosenfelder will start by summarizing the history and development of the changes that are taking place in valuation and financial reporting in Canada. Using the "Case Study", I will then state how an Appointed Actuary in the United Kingdom would conduct a valuation, and report the results. Dan Kunesh will then do the same thing with reference to the United States. Ken Clark will wrap up by doing the same thing with reference to Canada.

Through this procedure we will develop the principles, practices and differences in approach between these three areas.

MR. MICHAEL ROSENFELDER: In the time allotted to me, I will try and cover what has been happening until now, where we are today, and where we are headed.

Around 1970, a committee was established by the Canadian Institute of Actuaries to study the actuarial aspects of financial reporting for insurance companies as they might apply in Canada. At that time, the AICPA exposure draft had already made its appearance in the United States, and the Joint Actuarial Committee was in the midst of its work. The Canadian Institute, being represented on the Joint Committee, was able to benefit from these discussions and from subsequent experience as it unfolded in the United States. The Canadian Institute Committee, after extensive deliberations including many discussions at general meetings and at a special seminar convened especially for this purpose, produced in 1974 its own report, which subsequently became known by the affectionate title "The Blue Monster". Concurrently the Canadian Institute of Chartered Accountants also had a group working on this subject.

The Federal Superintendent of Insurance was keenly interested in these developments, and in due course appointed an advisory group comprising representatives of the Canadian Institute of Actuaries, the Canadian Institute of Chartered Accountants, the Canadian Life Insurance Association, and the Provincial Insurance Departments, the objective being to attempt to develop a reporting package which would meet the different needs of each of the various interested parties. From these discussions there emerged the new Insurance Acts which became law in July of last year, although the implementation of some of the provisions, particularly those relating to actuarial reserves in the Life Statement, was deferred, though it is anticipated that they will be applicable in 1978 or very shortly thereafter.

This is essentially where we are now, so before proceeding further let us take a quick look at some of the major highlights of the new law as it impacts financial reporting. But before doing this, let me define a couple of terms. The law requires that a "valuation actuary" be appointed by the Board, and that all such appointments, including changes in such appointments, be filed with the Superintendent of Insurance. Also, the term "members' statement" is used to describe the financial statements to be included in the annual report or the Directors' report as presented at the company's annual meeting.

There are perhaps three important conceptual differences between the current U.S. GAAP statement and the new Canadian statement which should be highlighted. First, one of the objectives throughout the discussions was to see if some way could not be found to preserve the concept of a single statement which could be used both for the purposes of statutory reporting and for the purposes of reporting to policyholders and stockholders. Indeed, there is now a requirement in the law that the annual report given to policyholders and stockholders, the "members' statement", must also include the opinion of the actuary and furthermore that the actuarial reserves in the annual report or members' statement must be the same as those used in the statutory statement. Second, it was thought to be appropriate, at least in the Canadian scene, that the same reporting rules should apply to both stock and mutual companies. Third, and finally, the deferment of recoverable acquisition expenses is to be handled through the reserving system as a modification to the reserve, rather than as an asset.

The law no longer incorporates quantified minimum valuation mortality and interest standards. The actuary will be required to adopt valuation assumptions which are "appropriate to the circumstances of the company and to the policies in force, and are acceptable to the Superintendent". The law envisages that this could include a withdrawal assumption, although this is not obligatory. A minimum modification method for the deferral of acquisition expenses is prescribed in the Act, but on a somewhat more generous basis than the present so-called "Canadian Modification". The new maximum deferral is 150% of the valuation premium subject to tests of incurral and recoverability. The amount that may be deferred is however to be limited if there is an inadequate margin between gross and net premiums to cover future maintenance expenses (presumably including provision for future inflation) and, for participating business, the margin must also cover reasonable policyholder dividend expectations.

Where a company chooses to use a modification method which is more conservative than the "minimum" method just described, it will nonetheless be required to disclose in its statement what the reserve would have been on the minimum method. The company will also be required to disclose the corresponding net level reserve, thereby enabling the reader of the statement to determine the adjustment or modification made for deferrable acquisition expenses. These comments apply principally to domestic Canadian companies, and in certain circumstances non-resident companies could be subject to slightly less onerous provisions.

The actuary will also be required to file with the Superintendent a "Report" which will need to specify, among other things the bases and methods used, and the reasons therefor.

Let us now for a moment turn to the left hand side, or asset side, of the balance sheet. Although of course not expected to audit the assets, the actuary, in establishing the interest assumption, will be expected to have taken into account the nature of the underlying assets. Of considerable importance to him therefore are the rules surrounding the reporting of both asset values and of investment income. Generally speaking, assets will be carried in the balance sheet at cost or amortized cost, subject to the establishment as an appropriation of surplus of an investment reserve. The definition of the minimum investment reserve is rather complex, but will be basically for bonds and mortgages  $1\frac{1}{2}\%$  of total book value, or 10% of the excess of book over market values if larger. For common stocks, the investment reserve will be the excess of book over market, with a 3-year forward averaging provision as at present. Of greater interest perhaps is the treatment of book gains and losses. On bonds, realized book gains and losses will be spread forward over the remaining lifetime of the bond sold, and will be charged or credited through the investment income account rather than as at present directly to surplus. For stocks, realized and unrealized gains and losses will be charged or credited through the investment income account but following a rather complicated formula which has the effect of slowly moving the aggregate book value to market value.

In summary, the law has made a number of far-reaching changes and considerably altered and broadened the nature and scope of the actuary's work. What has been the response of the Canadian Institute of Actuaries to these new developments? With the removal of specific legislated minimum reserve valuation bases, the individual actuary does of course have a great deal of freedom, which brings with it a new and far more onerous responsibility. The Canadian Institute has felt that it is essential for the profession to establish Recommendations for use by the actuary as he discharges his or her obligations under the new law. These Recommendations are in no way designed to inhibit the individual member in the exercise of his or her professional judgment, but rather to ensure that there exists a set of actuarial principles to which the member can refer and on which he can rely should he ever be in a position to have to defend his actions.

The development of these Recommendations has not been an easy task. Much new ground has been covered, and full recognition had to be given to the diverse needs of individual members of the Institute. This task has now reached an important stage, because draft Recommendations received the tentative approval of the Council of the Canadian Institute no more than four days ago, and indeed are at this very moment in the process of being mailed out to individual members for their consideration, and hopefully for tentative adoption at the Institute's Annual Meeting scheduled for next month in Toronto. At that meeting, the membership will also be considering a proposal that the Institute's Guides to Professional Conduct be expanded in due course to require that a member, when performing a valuation, takes these Recommendations into account. When implemented, this would then mean that he could be subject to disciplining if unable to justify an apparent failure to conform to the Recommendations.

The Recommendations deal with many important topics. They are divided into six parts, first, an introduction, second, data verification procedures, third, valuation assumptions, fourth, valuation methods, fifth, the actuary's report in the published statement, and part six (not yet completed), the actuary's report in the government statement. Time does not permit reviewing these Recommendations in detail, but those in the audience who are members of the Canadian Institute have seen earlier drafts and will shortly be receiving a copy of the version reviewed by Council earlier this week. Many principles and procedures are covered by the Recommendations. They discuss such subjects as the definition of policyholder dividend expectations, the construction of valuation assumptions, treatment of inflation, tests of reasonableness, non-par vs par policies, and group business, to quote just a few examples. Also included is a recommended standard wording for the opinion of the actuary to be published in the annual report or members' statement, including examples of disclosure notes. There still remain some unresolved issues, including such questions as the proper size of the provision for adverse deviations, the minimum prudent capital and surplus, and the deferred tax liability.

To support the more formal "Recommendations" the committee has also developed extensive "explanatory notes" which, while not binding, are designed to amplify or illustrate the meaning of the Recommendations, and which will be updated periodically as the need arises and as experience develops.

There is no doubt that with the passage of time improvements and changes may need to be made to the Recommendations, and the profession in Canada, particularly the Valuation Actuaries and those working with Valuation Actuaries, are anticipating some very busy times ahead. However, we do feel that the changes to the law will indeed permit the actuary to discharge his new duties in a professional and responsible manner, and that the Council of the Institute has taken steps, and will continue to take steps, to ensure that our members have both the appropriate professional tools and also the support and backing of the profession in order to enable them to do this. We will continue to watch with interest financial reporting developments in other jurisdictions, particularly in the United States where actuaries have been wrestling with some of these problems for somewhat longer than we have in Canada. Although we believe we have come a long way in the last few years, much work still remains ahead of us and it may well be that two or three years from now there will be a need for another panel at a Society meeting to discuss "Actuarial Standards in Canada".

MR. LECKIE: Prior to 1975 the United Kingdom Actuary had virtually absolute freedom in the methods and assumptions to be used in the valuation provided everything he or she did was disclosed. Unfortunately, at that time, which was a period of severe inflation, a couple of companies went under and this led to changes in the Insurance Companies Act of 1974. Since then, regulations have been adopted for the valuation of assets; however, final regulations for the valuation of liabilities have not yet formally been approved. Most companies, however, are using the draft regulations.

There are four important philosophical principles of U.K. valuation.:

1. A great deal of reliance is placed upon the Appointed Actuary, the equivalent of the Valuation Actuary in Canada.
2. The valuation is based on the break up or liquidation principle rather than the going concern principle used in North America.
3. The actuary should not be too liberal. He can be as conservative as he wishes; i.e. there is no need that the valuation be appropriate as is required in Canada or as would apply in the case of a GAAP statement in the U.S.
4. The emphasis is on the balance sheet; in fact, there are usually no earnings statements published as we know them.

I will illustrate how I would do a valuation based on the case study.

First, all of the assets would be valued at market. This includes a revaluation of mortgages based on the current interest rate. Thus, in effect my assets would be valued to yield the new investment rate of 9%. In fact, I could be conservative and use assets at anything less than market.

The interest rate I would use to value the liabilities would be derived from the asset rate. I am permitted to use 90% of that rate, that is 8.1%, in my valuation; however, assuming my company is paying income taxes I would be expected to reduce the interest rate to a net after tax rate. As taxes are 37½%, this will reduce the valuation rate to 5.06%. For participating business this would be further reduced to provide for the emergence of bonuses. This might mean a rate on participating business of 2½% or 3% or for non-participating business 5%, or whatever lesser rate I might use to bring in an element of conservatism.

I would probably use the latest published mortality table, the A67/70 table for all issues or the prior table A49/50 rated down one year. For annuities, I would probably use a(55) with some write down.

The approach I have described for interest is appropriate where there is no reinvestment of funds required. If a reinvestment rate is necessary, then the company would be expected to use an anticipated long term rate such as 6 1/4% gross or 4% net.

The U.K., like most countries outside North America, permits a Zillmer modification for expenses. The U.K. allows a maximum modification of 3% of the sum insured in the first year as acquisition costs. Like Canada, the U.K. has a recoverability test for maintenance expenses and bonus loadings.

The method of valuation now generally employed is net level premium with or without a Zillmer modification. Thus, companies no longer publish gross premium valuations as had been the practice in the past.

I mentioned that the U.K. valuation is on the liquidation principle. This is apparent from the use of market values for assets. It also applies for the liabilities in that cash values must be covered individually, policy by policy and at all durations. Thus, if the reserve is less than the cash value at any duration, the cash value should be substituted. Generally this is not a problem for U.K. companies as guaranteed cash values are not usual; it can present some problems to Canadian companies operating in the U.K. if they have followed their North American practice and included guaranteed cash values in their contracts. The problem becomes quite severe when interest rates are very high, such as 14% or 15%, as they were a few years ago.

Mention was also made that in the case of a mature U.K. company the insurance fund is generally taxed. The basis of taxes is interest less expenses so that the gross interest and the gross expense assumptions would be reduced by the rate of tax which is currently 37%. If the retirement annuities are classed as pension business then gross assumptions may be used in the valuation as this business is not taxed.

It is not usual for U.K. companies to publish an earnings statement. If, however, as actuary I wish to maximize the payout to either policyholders or shareholders, I would adopt a valuation with assumptions that meet the regulations but which may remove some of the conservatism of the assumptions I employed in the previous year. To what extent a U.K. actuary might be under this pressure I do not know; however, professionalism runs high in the United Kingdom and I might very well stand on actuarial principle, particularly if I have any question at all that concerns me about the company's position, either this year or under circumstances I can reasonably anticipate for the future.

Generally, the U.K. actuary will use the valuation balance sheet as his pay-out determinant. U.K. companies traditionally have nominal disclosed surpluses carried forward. The valuation balance sheet reveals this year's surplus prior to distribution and from this the actuary establishes the bonus rate usually by dividing the distributed surplus by the present value of sums assured. The shareholders' portion comes from the Articles of Association and might be in the form of £1 for each £9 bonus paid to the policyholders. The present value of the £1 in this example is transferred to the shareholders' fund and the Directors then decide the dividend to be distributed after the appropriate tax calculations.

In summary, heavy reliance is placed on the Appointed Actuary in carrying out the valuation and this in turn strongly impacts the payment to policyholders and shareholders.

MR. DANIEL J. KUNESH: The actuarial profession in the United States is going through a period of rapid change and growth. As in Canada, the actuary will assume an expanded role in pension and insurance company management and financial reporting. I will present this changing role in relation to our case study and give some thoughts on what direction the profession may be headed.

The valuation actuary in the U.S. may now assume two major responsibilities highly charged with a public interest. First, Members of the American Academy of Actuaries (MAAA's) may sign a statement of actuarial opinion to accompany the life and accident and health annual statement. This statement is now required in all states. Second, if properly enrolled with the U.S. Department of Labor, actuaries may certify qualified pension plan liabilities using Form 5500. And, it is expected that before long loss reserves reported on a property and casualty company's annual statement will also require actuarial certification.

These are truly significant achievements rewarding the profession's years of tireless efforts to gain national official public recognition from governmental authorities. The efforts of the U.S. profession to restructure its organization may also enhance these efforts. Yet, they are merely first steps. Our expertise in many aspects of risk theory and insurance company operations well equip us to assume a more comprehensive, more responsible role in insurance company and pension plan reporting. I will confine my remarks to life insurance company reporting.

What exactly does the statement of actuarial opinion certify to in the U.S.? In brief, the valuation actuary says that the actuarial components on the statutory balance sheet "make good and sufficient provision for all unmatured obligations of the company guaranteed under the terms of its policies." He does so by carefully examining underlying actuarial assumptions and methods to verify that they are commonly accepted by actuaries in general, are consistently applied and meet the requirements of state insurance laws. These laws, however, insist upon assumptions which are extremely conservative and do not relate to the actual experience of the company, completely ignoring policy lapses, the actual investment experience of the company and future policyholder dividends. This certification was clearly designed to assure solvency and reflects state regulators' historical concern about company failures.

Probably, it is more important to identify what the certification does not do? I submit it falls short of assuring solvency. Let me cite two basic reasons. First, while the opinion seems to assure the ability of actuarial liabilities to fund the company's future obligations, it gives no comfort as to the adequacy of the company's assets. In other words, the actuary assumes no explicit responsibility for valuing both assets and liabilities on a consistent basis. As an example, the corporate bonds and mortgage loans of our case study company are held at amortized value. Also, 25% of its business is in individual deferred annuities. In the U.S., if the tax laws were to change abruptly, largely removing the tax advantage now enjoyed by investing in annuities, widespread surrenders could cause unexpected cash flow problems. This is true even if reserves are conservatively stated. In a period of rising interest rates, market values of the company's bonds and mortgages could drop well below the already depressed 95% level, further compounding its cash flow problems and possibly contributing to a surplus deficiency.



Most actuaries will agree that liabilities in general are valued more conservatively than assets. This leaves open to question what exactly is the true level of a company's statutory surplus. Valuing bonds and mortgages at amortized cost versus market value supports the general feeling that in the U.S. the statutory balance sheet is valued on a modified going concern basis. Whether or not this basis adequately responds to the concerns of the regulators about solvency is also open to question.

Second, the opinion is silent about the company's surplus distribution practices. Statutory policy reserves in the U.S. exclude policyholder dividends. In other words, there is no recognition of the future dividends quoted in the company's current scales. Accordingly, the actuary assumes no explicit responsibility for an overly optimistic dividend scale; or a scale which unfairly discriminates between different classes of policyholders. Nor does he state whether or not the company selling both par and non par insurance properly allocates profits between participating and nonparticipating accounts. Quite possibly this situation will change if the recommendations of the Committee on Dividend Philosophy are adopted.

In our case study, the company limits to 10% the distribution of participating profits to shareholders. Certain states require this practice under law. It is possible that management could effect an improper allocation of profits between accounts to maximize shareholder dividends.

Other reasons could be cited but it is clear that the existing U.S. statutory actuarial opinion is limited in scope.

The U.S. actuary involved in reporting on a generally accepted accounting principles basis (GAAP) finds himself in an entirely different situation. He has to date gained little official public recognition for his part in preparing GAAP financials, yet, under the Guides to Professional Conduct and the Financial Reporting Recommendations of the American Academy of Actuaries, he assumes an expanded role and responsibility. Some examples will make my point clear. At the outset, I would like to state that GAAP has as its primary objective the proper matching of costs and revenues in each accounting cycle. Thus the income statement is accentuated. This can be contrasted to statutory accounting where surplus is the main issue and the balance sheet is emphasized. Guide 2(c) requires that as a minimum the actuary is to furnish an actuarial report to the company and the company's independent auditors. While the guide further calls for the auditor's opinion to identify the actuary or at least to include the actuarial report in the published financial statements, it is highly unlikely that this will happen in the U.S. The A.I.C.P.A. suggests that responsibility for an audit opinion rests squarely on the shoulders of the independent CPA firm. Accordingly, in an unqualified audit opinion, the auditors may not expressly refer to any other party involved in the preparation of published financial statements, actuaries included.

Auditing CPA firms realize that their accountants do not have the knowledge or expertise to properly evaluate most actuarial financial data. In fact, the Statement on Auditing Standards #11 permits the auditor to engage the work of a specialist in technical determinations or valuations affecting financial statements. However, he is not permitted to rely on the specialist, but must gain enough understanding himself to determine if the specialist's findings are suitable when making representations in those financial statements. SAS #11 clearly calls for the specialist to fully document his work in a manner similar to that called for by the AAA's Recommendation 3. It also prohibits reference to the specialist in the unqualified audit opinion. A dilemma seems to arise. The actuary's professional standards require him to prepare an actuarial report, yet the auditor is not permitted to rely upon it as Guide 2(c) suggests he should.

The text of the actuary's report outlining his involvement in preparing a GAAP financial statement is much more detailed than the statement of actuarial opinion used for statutory purposes. According to Recommendation 3, it must disclose to the auditor the scope of the actuary's involvement and all actuarial assumptions and methods used, including, where appropriate, an appraisal of their suitability for the purposes at hand, whether it be purchase accounting, historical accounting, or an S.E.C. registration. Assumptions disclosed are to include interest, policy lapses, mortality, morbidity, policyholder dividends and expenses. He assumes responsibility for both aggregate reserves and deferred policy acquisition costs. His report must properly recognize any restrictions on the distribution of profits to shareholders and any other factors which might influence the division of profits between stockholders and policyholders. In fact, in many ways, the U.S. actuary's responsibilities in preparing a GAAP actuarial opinion resemble those proposed in Canada for the valuation actuary.

Let us keep these comments in mind as we take a brief look at our case study. In this analysis I will ignore any federal income tax impact for the sake of simplicity. While the president wants meaningful financial statements, it is clear he is under some pressure to increase shareholders dividends. This happens just after the company has substantially improved its policyholder dividend scales and when rising interest rates have forced down the market value of the company's bond portfolio. In evaluating the actuary's responsibilities in this situation, let us assume the company prepares audited financial statements on a GAAP basis.

It is stated that the company limits to 10% distribution of participating profits to shareholders. It is not clear why policyholder dividends were increased in the first place -- possibly to maintain a competitive edge or possibly to reduce the participating policyholder surplus account to a level that is more in line with the non par account. In any event, since dividends are not made part of statutory policy reserves, the company actuary assumes no direct responsibility for the company's position on surplus or policyholder dividends in his statutory statement of actuarial opinion.

Under GAAP, however, he does assume this responsibility. Because of the restrictions placed upon the distribution of participating earnings, dividends generally would be excluded from reserves and reserve assumptions would be comparable to those used for the company's non par business. In this situation, the actuary must determine if a separate GAAP liability is required for the undistributed earnings accruing in the favor of participating policyholders. Because dividends were increased, he must also determine if future recoverability of deferred policy acquisition costs (DAC) is impaired. If so he has three options. He may either write down DAC for GAAP reporting, recommend a cut in the dividend scale, or clearly disclose his reservations in his report.

Generally, accruing GAAP surplus far exceeds statutory unassigned surplus, especially for companies that are growing rapidly. The president must clearly understand that shareholder dividends are paid out of statutory not GAAP unassigned surplus. This misunderstanding often occurs among shareholders of insurance holding companies when their dividends are prohibited by a statutory deficit even though a significant GAAP profit may have been reported.

Undoubtedly the restrictions placed on the par policyholders account will limit the president's efforts to increase shareholder dividends. Realized capital losses also impair these efforts. Because interest rates have risen, the company might, nevertheless, choose to increase shareholder dividends. Such a decision would hinge upon the promise of a rapid recovery in surplus through increased investment income in the future even though surplus is temporarily reduced. The actuary, however, must pay close attention to the minimum surplus requirements in the company's state of domicile. He must also anticipate the future surplus strain inherent in new business production. As can be seen, the company drains at least 75¢ of surplus on every dollar of new premium it collects. Under GAAP, surplus strain is relaxed by deferring all excess first year commissions and direct first year costs. Thus, a primary component of the difference between GAAP and statutory surplus is represented by a non-invested, intangible asset.

Many believe that the 1976 NAIC model non-forfeiture and valuation bills, once adopted, will lower reserves. Thus, the company might reduce some of its future statutory surplus strain by changing to the new standards. However, since to date only about 15 states have passed this legislation, the company might be well advised to hold back until more states follow suit.

The increase in renewal unit expenses has no direct impact upon the actuary's opinion of the statutory position. Under GAAP, however, he must be concerned about its impact on the recoverability of DAC. Also he must consider whether GAAP assumptions should be revised prospectively to reflect the increased rate of return on investments.

In the annual statement, all bonds and mortgages not in default are recorded at amortized cost, regardless of current market value. The same is true under GAAP unless a significant decline in market values below cost is considered to be permanent. In this situation FASB Statement #12 directs an immediate write down from amortized cost to market. This results in recording a realized loss and reduces both current income and surplus. Realized capital gains or losses upon disposition of bonds and mortgages prior to maturity pass directly to surplus on the annual statement but go through operations under GAAP. While our case study company does not invest in marketable equity securities, primarily stocks, a word on their reporting treatment may be beneficial here. Under statutory, common stocks are recorded at market and preferred stocks at cost. Under GAAP, all marketable equity securities are recorded at the lower of aggregate cost or market. Accordingly, unrealized gains or losses pass directly to surplus under both statutory and GAAP.

What's on the horizon in the U.S.? First, there appears to be no great sentiment to move rapidly in the direction that Canada is moving in financial reporting. The legislative process in the U.S. is much more complex and slow moving with 50 state jurisdictions, the NAIC, the SEC, the IRS, and other federal regulatory bodies all expressing an interest in insurance company regulation. Many changes are in the works related to statutory reporting, too many to discuss in detail here today. Let me however give you two examples. First, there is increased interest in a dynamic statutory valuation system, one which would automatically adjust minimum reserve standards for interest and mortality to reflect more current experience. This alone would significantly complicate the actuary's role in certification. Second, the NAIC will try to reduce the amount of time now required to update valuation laws by adopting so called guidelines. An example might be the guidelines expected from the NAIC in June relating to the reserving standards for renewable term insurance. It is hoped such guidelines will prompt uniformity between states when conditions warrant a change. This objective has not been achieved by model legislation.

Currently, only stock life insurance companies registered with the SEC are required to publish GAAP financials. No comparable basis of reporting has been defined for or is required of mutual insurance companies. Nor does it seem likely that such a basis will be defined in the foreseeable future.

FASB Statement #14 also presents special complications in GAAP financial reporting. This statement requires a disaggregation of the financial results for any segment of business comprising of more than 10% of gross or net income. It is not yet clear how the various lines of an insurance operation would be segmented, although guidelines are expected from the SEC in the next year or two. In fact, the whole emphasis of GAAP reporting may shift from the "revenue/expense" point of view toward an "asset/liability" point of view as discussed in the FASB's report entitled "Conceptual Framework for Financial Accounting and Reporting." Many accountants feel there is growing sentiment in the profession to de-emphasize the income statement and pay closer attention to a company's surplus position and thus the balance sheet.

A second major issue inferred from the "Conceptual Framework" project relates to historical versus current value costing methods. At present all accounting is based primarily on historical costs. To date no one has clearly defined how the current or replacement value approach would impact the assets and liabilities of insurance companies. Certainly such an approach would call for a gross premium type valuation of liabilities and replacement or market valuation of assets. Both concepts seem to support the "asset/liability" point of view.

However, regardless of the future direction of accounting standards, other problems have evolved which have a more immediate impact upon the insurance industry. Concern continues to grow over such matters as a life insurance company's solvency, its cash flow position and the apparent inequities that exist between the valuation of assets and liabilities. Undoubtedly, as actuaries we must share this concern as it is an area clearly within our realm of expertise. To date we have not assumed enough public responsibility regarding the problems that relate valuation, cash flow, and surplus.

A number of environmental conditions contribute to this concern:

1. the combination of high interest rates and depressed values of long term securities,
2. the rapid rate of change in interest rates,
3. the larger undertaking of investment risks as companies attempt to maximize their rate of return,
4. unexpected cash flow problems experienced in recent years especially by large underwriters of group health and annuities,
5. the impact of inflation on expenses,
6. increased competition via lower premiums, more liberal guarantees, reduced profit margins, all resulting in greater surplus strain,
7. increased exposure to underwriting risks, as under medical expense reimbursement insurance.

These concerns are or have been voiced by many interested parties. Examples are:

1. the Unruh Committee in the Senate, where initial queries in 1973 about nonforfeiture matters turned to questions regarding the valuation of assets and liabilities, cash flow and company solvency,
2. the NAIC Committee Technical Task Force on Valuation and Nonforfeiture Regulations,
3. the American Life Insurance Association Task Force on Actuarial Aspects of Valuation Problems, and
4. the American Academy of Actuaries Committee on Life Insurance Company Financial Reporting Principles.

According to the Unruh Committee reports, there is ever increasing pressure on both management and regulators for adequate public disclosure of insurance company financial results. This adds a significant new dimension to valuation and surplus problems of companies. Concern over actual or potential insolvencies is leading to a cry for action. As a result we have seen the NAIC develop a series of "early warning tests." Many states have adopted insurance guaranty laws. The NAIC is also considering a regulatory test for minimum surplus based upon such factors as risks assumed, the distribution of a company's business, and its level of reserves.

Actuaries working with the company's management can stem surplus and cash flow problems if only they carefully consider such concepts as

1. what events contribute to adverse experience (sudden catastrophic occurrences short term experience fluctuations, persistent long term unfavorable experience),
2. what are the sources of surplus (favorable underwriting experience, built in profit margins, capital gains or losses, investment return on capital),
3. what are the purposes of surplus (to guard against asset fluctuation, to provide for expansion of new business, to allow expansion into new areas of activity or other lines of business).
4. how much surplus should a company maintain.

Obviously the level of surplus relates to the company's cash flow needs and the company's investment philosophy. It can vary by each major line of business and the resultant exposure to risks. I believe the actuary is in a unique position to actively participate in the industry's response to these concerns.

While important, the efforts of the U.S. actuary to gain a national official recognition for his profession are still in an embryonic stage. The broad base of involvement of the consumer, the company and regulator and subgroups of each may have a significant impact on future financial reporting bases of insurance companies. This situation provides a unique opportunity for actuaries to assume a full role of professional responsibility in defining a more appropriate basis of reporting, a basis which will assure company solvency through sound cash flow management and consistent valuation of both sides of the balance sheet.

MR. KENNETH T. CLARK: I have no presentation of my own, but two Fellows of the Society are Valuation Actuaries for companies which are identical to the company in the case study. They are not at this meeting, and have asked me to tell you how they went about the job.

Eagerbeaver is Valuation Actuary for one of the companies. Here is his report.

Let's start with non-par insurance. Our mortality experience is slightly more favorable than the industry. The most recent table is the CIA 69-75 Table and our mix of medical and non-medical is about the same as that in the inter-company exposure. Therefore we take that table as expected mortality and increase the rate by 30% as a provision for adverse deviations.

For withdrawal rates, the provision for adverse deviations can be tricky. The result of the provision should be to increase reserves. Depending on the inter-relationship of guaranteed cash values and deferrable issue expenses with the other assumptions, the provision can be positive or negative. Often the proper provision is positive for term insurance and negative for permanent insurance, but this is far from a universal rule. Based on tests, we assume the Linton A Table for permanent insurance, and 18% in policy year 1 grading to 10% in policy year 5 for term insurance.

Our actual first year deferrable issue expenses are 175% of premium (50% + 50% + 75%). For years 2-9, our cash expenses are 5% of premium and fringe benefits are 2.5% of premiums, making a total of 7.5%. For renewal years, the provision for adverse deviations should be positive, so we increase 7.5% to 8%. For the first year, the provision should be negative and the aggregate provision for all years should be negative; hence we reduce the 175% to 150%.

For administrative expense, we have a 2% premium tax which we increase to 2.5% to provide for adverse deviations. Currently our per-policy issue expense is under \$12 per year. Therefore, we use \$12, plus a provision for future inflation.

Inflation and interest are inter-related. Our current new money interest rate is 9% and our current portfolio rate is 7%. For interest, we formulate our assumption in three steps. For step 1, we project the new money rate as continuing at 9% for one more year. After that it is imponderable. Hence, we grade from 9% down to 4% over 10 years. Step 2 is to translate the new money rate into a portfolio rate. We made cash flow projections and as a result we expect that our present portfolio rate of 7% will be level for 5 years and grade down to 4% over the next 15 years. Step 3 is to provide for adverse deviations; we use .25% for 5 years grading up to 1% over the next 15 years. Thus, our final assumption is 6.75% for 5 years grading to 3% over the next 15 years.

This led to an inflation assumption of 3% for 5 years grading to 0% over the next 15 years, but we use this only for permanent insurance. For term insurance (where the interest assumption is unimportant), we assume 3% inflation continuing indefinitely.

So much for non-participating insurance. For participating insurance, we make a dual reserve calculation. The two calculations differ (i) in the provision for adverse deviations in the assumptions and (ii) the treatment of policyholder dividends and issue expenses.

In the first calculation, we ignore policyholder dividends and use the same provision for adverse deviations as would be used for a comparable non-participating policy. In theory, we could have used a slightly smaller provision to reflect the fact that the participating policy has bigger gross premiums, but in practice we ignore this refinement.

We then make a second calculation whose purpose is to determine what additional amount, if any, is needed to support the dividend expectations of policyholders. In the second calculation, we include policyholder dividends at the present scale in addition to the guaranteed benefits and expenses. Also, we ignore the statutory 150% ceiling on deferrable issue expenses. We use a very small provision for adverse deviations. In selecting that small provision, we take account of the fact that we are a medium size company and we don't change our dividend scale very often. I talked with the valuation actuary for Gigantic Mutual, which changes its dividend scale every year. Kneejerk, their Valuation Actuary, said that, because their dividend scale responded instantly to changes in operating conditions, and because they had fat dividend margins in their premium rates, he was able to use a zero provision for adverse deviations. In our case we need some provision. Our present dividend scale is based on 7% interest and, after discussion with our President, it was agreed we shall cut that scale if interest rates fall to 6.5%. Therefore, we use 6.5% as our interest assumption in this second calculation. Similarly, we felt that, if mortality rises to 110% of the CIA 69-75 table, we shall cut our dividend scale, so that assumption was used for mortality. The other assumptions are similarly formulated.

The second calculation produced bigger reserves than the first calculation so we used the reserves from the second calculation.

That is the report of Eagerbeaver. Here is the report from Playitcool, who is the Valuation Actuary of the other company.

For our non-participating business, we built a model of our inforce using representative plans and ages. Without too much work, we are able to make detailed calculations for each of the plan-age combinations in the model. We use assumptions which were the same as those used by Eagerbeaver. We figure our non-par reserve as the reserve in the model.

For participating insurance, we use a fairly refined three-factor dividend formula. Under the right conditions, it can be shown that a traditional net level premium reserve using an ultimate mortality table, a level interest rate, and ignoring expenses, gives a proper theoretical result. Because our dividend scale is not figured strictly according to theory, we make detailed calculations for a few representative plan-age combinations. For these, we use the same assumptions and methods that Eagerbeaver used. As a result, we concluded that it was proper to continue the reserve basis we have used in the past; namely, 1958 CSO, 3.5%, and the net level premium method.



MR. WILLIAM H. AITKEN: Two questions. First, how are solvency safeguards reflected in the proposed statement? Second, there is a possibility of reserves being shown in the balance sheet on three different bases. How is the income statement affected?

MR. ROSENFELDER: As to solvency safeguards, the Valuation Actuary is required to incorporate a margin for adverse deviations into each of his assumptions. This is the first line of defense. The second line of defense would be earmarked surplus, in the form of contingency reserves. Thirdly, surplus itself. The balance sheet still has as its primary objective the demonstration that the company is solvent and can be expected with a fairly high degree of assurance to meet its obligations as and when they fall due.

As to how the different reserves flow through the income statement, the law requires the actuary to go through fairly elaborate calculations to develop the "minimum reserves" which take into account deferrable, recoverable acquisition expenses, subject to the 150% ceiling, and the hope is that for most companies this will be the formal balance sheet reserve.

The use of the net level reserve is not usually suitable as part of the balance sheet. It is merely a device to enable the reader to determine what the deduction or modification to the reserve was in order to reflect deferrable acquisition expenses. The difference between the net level reserve and the minimum reserve, as it is called, is clearly the deduction made from the reserve for the deferrable acquisition expense. In the U.S. environment, it would appear on the other side of the balance sheet.

The possibility of three reserves is anticipated in the law, but we strongly hope that it will very rarely, if ever, occur. We would hope that in most cases the Valuation Actuary would use the minimum reserve, that which he considers appropriate to the circumstances of the company and the policies being valued, in the balance sheet. The increase in this reserve from year to year will then be the item that will flow through the income account.

Now the law does not compel a company to use this minimum reserve in its balance sheet. But if it chooses to use a higher reserve, for example a net level reserve, it must still disclose what the minimum reserve would have been so that the informed reader can make his own adjustments.

It is a little unclear at the present time as to how all this would flow through the income statement in the statutory return. Obviously the Minister or the Superintendent will specify a form of reporting; but my hope would be that it will be quite clear in the income statement what the income would have been had the minimum reserves been used throughout.

MR. DAVID B. ATKINSON: We are interested in taking short cuts and as I understand it, if we can show that our reserves are greater than the minimum for every policy, every duration, we can just hold our current reserves and not even report minimum reserves, since we are a U.S. company. Not having to report minimum reserves is the major difference between the Foreign Insurance Companies Act and the Canadian and British Insurance Companies Act.

MR. RONALD H. M. JONES: There is no statutory requirement for a non-resident company that is using net level premium reserves in its valuation statement to recalculate the statutory minimum reserve. The Superintendent will take it for granted that the net level premium reserve is greater than the statutory minimum. There is less concern for recalculating the statutory minimum reserve in this case because there is no income statement in the statutory statement filed by a non-resident. It is merely a test of the adequacy of the deposit.

MR. LECKIE: A question for Mr. Clark. If the Valuation Actuary of a non-resident company uses a net level premium basis, is he abiding by the principles of the standards that are being set out by the Canadian Institute of Actuaries? Could such actuary be disciplined if he did use the net level premium basis?

MR. CLARK: The question has no clear-cut answer. I think that, as long as the purpose of the valuation of a non-resident company is to test the adequacy of its assets in Canada and not to publish an income statement, a conservative reserve meets that test. I do not see how anyone could reasonably require the Valuation Actuary for a non-resident company to go to great lengths to eliminate conservatism from the reserves if that is not what the Valuation Actuary wants to do.

He should be sure, however, that the reserves are truly adequate. People usually think of a net level premium reserve as one calculated using a level interest rate and an ultimate mortality table. For term insurance, that may or may not produce an adequate reserve; and for substandard insurance, that may or may not produce an adequate reserve. The Valuation Actuary is still bound to say in his report that he considers the assumptions appropriate and an ultimate mortality table may or may not be that.

MR. FRANK S. AUSTIN: One major problem for a non-resident mutual insurer in Canada is the problem of dual financial reporting. Having different financial standards in Canada and in the U.S. causes several problems to arise.

Mr. Clark's presentation virtually ignored the cost of calculation in the choice of valuation methods. Also, at year-end the Valuation Actuary has a very real problem in meeting deadlines. Following the financial standards that were referred to in the "Eagerbeaver" presentation, the Valuation Actuary of a company having a wide variety of business at many varied ages and durations would find it impossible to meet the year-end deadlines. The real question about financial reporting is where and how to make approximations.

As to the comments about the net level premium method, I find that for whole-life coverages the single decrement net level premium method is quite good between the tenth and thirtieth durations. The problem in the first ten years is the treatment of acquisition expenses. After the thirtieth year, there may be a problem with dividends.

A further problem is that the law and the current draft standards do not use the same terminology. This lack of consistency causes considerable confusion that should not exist. An example is the contrast between the definition of obligations in the draft standards and the reference to "unmatured obligations guaranteed under the terms of the contract" in the law.

MR. CLARK: The recommendations of the Canadian Institute encourage the actuary to use approximations where that reduces the cost of his valuation or where it improves his control over the work. Even so, this is not going to be an easy exercise. You have to be prepared to do some work. Parliament has changed the law of the land, and something should happen as a result.

Every multi-national company, in any kind of business, has to face the fact that there is going to be a certain amount of dual regulation. There are a number of companies which do business in more than two countries. They meet the requirements of the law in every place that they do business. It's very simple - either you meet the requirements or you don't do business.

MR. LECKIE: In jurisdictions such as Jamaica, United Kingdom, Egypt, where we operate, we have to prepare statements of our world-wide business on the form which is prescribed in that jurisdiction - so it becomes quite a problem, particularly in the United Kingdom where the form of valuation is so totally different from what we have here.

A second point. It is likely that the majority of the companies will use an implicit valuation which follows traditional methods, after using explicit tests to ensure that their implicit valuation produces a reasonable approximation. It is doubtful that any of us will incorporate withdrawal rates into our implicit valuation, but we would use them in explicit tests of appropriateness.

Finally, the annual meeting of the Canadian Institute of Actuaries will be held in Toronto on June 12 and 13. The members will be asked to adopt the standards that have been approved by Council for approval by Council a year from now. The standards are in a test phase for that period. I would urge you to attend and to register your protest if you feel that what is taking place in the actuarial profession is not to your liking.

