

## **RECORD OF SOCIETY OF ACTUARIES 1977 VOL. 3 NO. 2**

### **VALUATION AND NONFORFEITURE DEVELOPMENTS**

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JOHN C. MAYNARD, RICHARD V. MINCK**

1. Reports of The Society's Special Committees on valuation and Non-forfeiture.
2. Report of The Special Committee on Valuation of Canadian Companies.
3. Some reflections on valuation and related problems.

**MR. ARDIAN C. GILL:** The Society's Special Committee on Non-forfeiture issued its report in January, 1976. The report starts with basic principles and ends with 30 recommendations. A major recommendation was to keep essentially the same approach as in the Guertin laws. There are many proposals for simplification and for removal of perceived inequities, and there were some attempts to introduce flexibility, but the basic design was to remain intact.

The original report fell short of proposing specific expense allowances for the new law, suggesting only the upper and lower bounds and the general form of the allowances. Mr. C.F.B. Richardson, then Chief Actuary of the Tennessee Insurance Department, and a member of the NAIC task forces and committees, worked with the Society Committee and with the LOMA to obtain expense data which he translated to a form that could be used for expense allowance in the new law. Mr. Richardson wrote a paper on the subject, which the Society will publish. He made specific expense recommendations and proposed further simplification in the form of the allowances, the chief one was to abandon the variation in allowances by plan.

The Society had recommended that there be a single set of nonforfeiture values for a given plan, regardless of the interest rate actually used. We tested the Richardson allowances and concluded that they could be used with interest rates as high as 6% without inequity. The allowances proposed by Richardson were 125% of the nonforfeiture net premium plus 1% of the face amount. These figures are fairly representative of the median result of the companies he studied. Those companies were relatively large in size but small in number, and thus the results may not be representative of the entire 1,500 companies operating in the United States. Also, the current nonforfeiture law has expense allowances set at a level high enough to accommodate the most expensive company. It would amount to a change in philosophy to use median level expenses, a change, incidentally, the NAIC seems prepared to make.

The Society Committee studied a number of questions to supplement its report - I will only mention them. They are submitted for the Record.

1. In a significant departure from tradition the Society Committee had taken the position that the linkage between reserve and nonforfeiture values should be severed. Subsequent to the report, Mr. John R. Gardner, the Committee vice-chairman, drafted a very fine position paper on the subject which was well received by the NAIC and appeared in *The Actuary*.

2. Another important principle in the original Guertin Report was that the continuing policyholder should not be placed in a worse position by a terminating policyholder. There is a strong sentiment among State Insurance regulators that cash values ought to be high which contravenes this principle. Mr. Bennie W. Baucom, who worked with the Society Committee from its inception analyzed this question in terms of the cost of withdrawal, showing in effect the penalty to continuing policyholders if cash values exceed asset shares. This was furnished to the NAIC to permit them to assess the consequences of setting cash values at a high level.
3. We also tested the appropriate exemption for term insurance, the level at which cash values should be ignored on the ground of triviality, family policies, joint life policies and uniform seniority, curtate vs. continuous functions, age nearest vs. age last birthday, the effect of premium variations on the proposed expense allowances and the various equities involved in cash values dependent on the premium mode.

The original study was inspired by a developing interest in the profession and the industry in a review of both the subjects of nonforfeiture and valuation. The report itself did not stimulate this interest but I think it's fair to say that it gave impetus to a number of developments. Among these are new deferred annuity nonforfeiture laws, higher interest rates which are being proposed in the current law, separation of interest assumptions for valuation and nonforfeiture, new mortality table studies and a model bill incorporating substantially all the proposals in the report.

MR. RICHARD HUMPHRYS: The committee headed by Mr. Robert N. Houser established firmly that the valuation of liabilities of a life insurance company is very much in the province of the professional discipline of the actuary. Secondly, it is only the tool - one step in the general problem of the consideration of the solvency of the life insurance company in the general sense of whether the company has enough resources to meet the long term commitments that it has undertaken. This led us to the view that there had been too much preoccupation in the past on the liability side of the balance sheet - on the calculation of policy reserves and that more intensive study was needed on the whole question of the adequacy of the resources of the company which means bringing in not only the valuation on the liability side, but the question of the asset portfolio.

We were conscious of the changing environment the life insurance industry is working in, with much more exposure to public comment, the pressure for cost disclosures, the competition with other savings media, all pressures leading in the direction of thinning the traditional financial strength. This points very much to the need for intensive, scientific study of the whole question of the adequacy of resources of the company to meet its obligations. We felt that there should be attention to the basic principles rather than solving problems within the environment of the regulatory structure. Regulations have to be decided from some place, and the regulators need a reference point of sound theory, sound professional consideration of the principles that should underlie any requirements for the valuation of assets and the valuation of liabilities. We were conscious too, of different national trends. Trends in the United Kingdom, going in one direction, and in Canada perhaps in another and in the United States preoccupation with statutory requirements. We felt unanimously that this was a project that the Society of Actuaries was particularly fitted to undertake and that it should appoint a committee to engage in an intensive study of this question. We expressed the view that there probably

should be a small steering committee with a number of task forces. That led to the appointment of the valuation committee that is now in operation and of which Mr. John C. Maynard is a member and chaired by Mr. Charles Lambert Trowbridge.

MR. JOHN C. MAYNARD: The United Kingdom, beginning three or four years ago, took a new regulatory position that was followed in Canada within the last two or three years. We are looking at a major change in the insurance act in Canada, involving new principles as far as how the actuary should conduct his work and give his certificate. In the United States thought is also being given as to how the actuary should perform the valuation.

In the report that Mr. Houser's committee made, they listed what they regard as the most important problems: (1) The combination of high interest rates and depressed asset values, also the increased speed at which interest rates change, (2) greater risk-taking in the investment area as we obtain higher yields, (3) possibility of significant cash flow problems, (4) continued inflation and expenses, (5) increased competition, (6) the severe strain on statutory surplus resulting from using substantially higher interest rates in premiums and using statutory reserves, and (7) significant growth and exposure to high risk areas, such as disability income and medical expense reimbursement insurance. These are all problems which require a deeper look at the underlying valuation principles.

The committee under Mr. Trowbridge has just begun its work. It has decided to divide its responsibilities into five main areas. (1) Individual life insurance, (2) the liability and surplus problems of individual medical, major medical and disability insurance, (3) the liability and surplus problems of group insurances including health, life and credit, (4) Liability and surplus problems of pension and annuity contracts, (5) assets and investment reserves and related surplus problems. I will review one train of thought they are considering.

#### Theory of Valuation

At any point in time a life company can expect to receive a series of future in-payments, and under the terms of its contracts, can expect to make a series of out-payments. The valuation process consists in establishing a measure of the strength of the in-payments, the assets, in relation to a measure of the strength of the out-payments, the liabilities.

The assets are measured by taking the present value of the in-payments, in the form of investment income and capital. Allowance is made for rate of interest and probability of payment.

The liabilities are measured by taking the present value of the out-payments which include claims, surrender values, expenses, taxes and dividends. Premiums are treated as negative out-payments. Again, allowance is made for rate of interest and the probabilities of payment.

These concepts are simple and basic but it is much easier to state them than to put them into practice in either a theoretical or practical manner. A number of questions come quickly to the fore.

What rate of interest should be used in valuing assets? In particular, should it be related to the rate on new investments, or to average rate from the past?

How do you get the probabilities of non-payment for the in-payments?

What rate of interest should be used for valuing liabilities? What should be the relation of this rate to the rate for the assets?

How should the liability probabilities be provided for, particularly those which are subject to voluntary control, i.e., non-payment of premium, surrender, the election of options?

#### Nature of Solvency Test

In studying the process of valuation for solvency, it is wise to put yourself in the position of the regulator.

The regulatory official needs to have a measure of the financial condition of the company and a warning of approaching weakness. There are several actions a regulator can take after weakness appears and before insolvency takes place.

- (1) He can place a limit on expense disbursements.
- (2) He can limit or suspend new business.
- (3) He can encourage a merger with a strong company.

After insolvency is declared, the receiver can change the terms of some contracts and reduce some contractual payments. The receiver should not wind up the company, since this would cancel risk-sharing arrangements and bring hardship to those relying on them.

This suggests that the statutory financial report should provide not only a test of solvency but also a warning of the approach of insolvency.

The test of solvency should establish that the company has the resources needed to service the business in force to maturity including the payments to policyholders which could have been expected, and without writing new business.

#### The Present Statutory Statement in U.S.

The basis structure of the statutory statement has remained unchanged for many years.

Mortgages are valued at their account value. Bonds which pass tests of security and opinion are valued at amortized cost. Other bonds and stocks are at market value. The Mandatory Security Valuation Reserve is correlated to the asset value rules so that it grows faster and towards a higher limit if the security of assets is reduced. The MSVR absorbs changes in market value of assets for those assets which are valued at market, and absorbs changes from amortized cost to market value for those bonds which become depreciated. Surplus is therefore isolated from these changes in the year of change if the MSVR is large enough; but if the MSVR is used up, surplus is directly affected by further changes.

Actuarial reserves are required on a net premium method using conservative assumptions as to mortality and interest, with the assumptions being established when the policy is issued. Reserves must exceed cash values in the aggregate.

The statement has been particularly well suited to participating Ordinary insurance in the past. Asset values and reserves are stable and continuous from year to year. Although reserves appear to be unrelated to assets, in fact there has probably been a reasonable co-ordination between assets, reserves, and policyholder dividends. If dividends are on a contribution formula, then the reserves have acted as a reserve for the accruing excess interest and mortality portions of the dividend, to be released in the year prior to declaration.

The present statement has been designed for the "going concern", i.e., one which is not subject to great change. However, this statement may not be well suited to the future in which changes in character, degree, and frequency may be important. The most important problem areas are these:

- (1) The statutory actuarial reserves do not require any test that higher future maintenance expenses are provided for in future premiums.
- (2) The values of fixed interest investments are not related to values in the market place between purchase and maturity. In times of economic difficulty when interest rates are high, assets may be overvalued. The rules for MSVR are arbitrary and its limits are not affected by differences between statement and market values. The result is that the sheltering effect of the reserve may disappear when its need is greatest.
- (3) The lack of realism in asset valuation becomes important if an increase in demand for guaranteed cash and loan values occurs when the market value of assets is low. If the demand is such that existing assets must be liquidated, then a loss is apparent. However, even if cash flow is not negative, there is a weakening because the rate of interest is lower than it would have been without the increase in demand. The frequency of cash surrenders could be greater in the future because there will be more alternatives to and variations in life insurance policies. Surrenders could arise more often for reasons of refinancing, replacing, or withdrawing.
- (4) Single premium annuity reserves are required at interest rates sometimes lower than the rate in the gross premium.

#### Structural Factors

There are several factors which affect Ordinary life insurance, which increase the cost to continuing policyholders, and thereby may lead policyholders to surrender:

- (1) Early cash values are higher than they used to be.
- (2) Policy loans are at low rates of interest.
- (3) The federal income tax represents a heavier load when interest rates are high.

#### Principles for Statutory Valuations

One method of testing statutory valuation procedures is to make a theoretical and realistic valuation and then see if the statutory valuation produces the same results. By "same results" is meant the same surplus.

The best theoretical valuation is a gross premium valuation and a procedure for making it can be given easily in outline.

1. Determine the value of existing assets at market value and from this work out the rate of interest which is implied.
2. Set the valuation rate of interest for reserves at a slightly lower rate. If the length of term of the liabilities is longer than the term of the assets, a different rate should be considered for periods beyond the term of the assets.
3. Value the reserves using the gross premium method applied to business in force.

$$\begin{aligned} \text{Present Val.} & (\text{Benefits}) + \text{PV}(\text{Expenses}) + \text{PV}(\text{Taxes}) \\ & + \text{PV}(\text{Dividends}) - \text{PV}(\text{Gross premiums}) \end{aligned}$$

The method uses termination rates and surrender values. Termination rates are conservative--i.e., the reserves are not less than they would be with zero termination rates.

4. Theoretical surplus is the excess of assets over liabilities.

With the aim that the statutory statement should determine the same surplus as the theoretical valuation, we can peer into the future and try to visualize some desirable changes in the statement:

- (i) Assets should be valued according to some modification of present rules. The modification should bring assets less MSVR closer to market value than at present, but with less annual fluctuation than market value. One way to accomplish this would be to make the annual charge for MSVR and its limit dependent on the difference between statement and market values.
- (ii) Retain the net premium method for reserves, but permit some flexibility in the choice of valuation interest rate, which should be related to the interest rate for the assets.
- (iii) Provide for an actuarial certificate that reserves do provide for dividends, expenses and taxes.

MR. GILL: Mr. Maynard you defined assets as the in-payments, essentially as assets in investment income and then almost arbitrarily in the out-payments, you introduced a negative premium. I wonder why you chose that route?

MR. MAYNARD: It is the traditional treatment to take liabilities as the present value of future benefits, less the present value of future premiums. Therefore, take this present value as a deduction on the liability side. There is another reason too. It is wise to collect on the liability side, all the items which depend on the survival of the particular policy. When the policy goes off through death or whatnot, the whole effect of the statement of that policy goes off one place and one time.

MR. JACQUES DESCHENES: I would like to address my question to the termination rates. You said the reserves should not be less than those using zero percent termination rates. I do not agree that we have to go to that extreme situation where the cash value flow by individual policy would be required.

MR. MAYNARD: As interest rates change widely, the underlying values of assets change in the sense that the amount that you can exchange them for cash changes. However, the liabilities do not change to the same degree as the assets for the reason that as far as ordinary insurance is concerned, you have these guaranteed cash values as floors under the liability calculation. Those cash values ought not to be necessarily an absolute floor. You can introduce termination rates. Let us look at the problem in two situations. First of all, when interest rates are high, the asset values are down, and if you are looking at zero termination rates, probably the present value of the liabilities is way below cash values. You can introduce termination rates so you could use the reserve somewhere between the reserve with zero termination rates and the cash values. When interest rates are low, asset values are riding up, and the present value of the liabilities would go up too. But in that case, you would not want to go below the value of the liabilities. Again you would want to be somewhere between the cash value and the reserve. All I am trying to say is that it is wise to use termination rates. But use them wisely so that the value of the liabilities are not too low, if you have a sudden surge of termination.

MR. PETER CHAPMAN: Mr. Maynard, in your discussion of a gross premium valuation as a means of evaluating the appropriateness of the statutory reserves, you did not state but it was implicit that the parameters used in the gross premium valuation would be the most probable and most realistic parameters rather than necessarily the most conservative. Has the committee considered the use of a risk analysis factor or a particular acute risk, such as fluctuation in valuing disability income - the effects of large scale unemployment on claim rates and claim costs? Et cetera?

MR. MAYNARD: The answer is no. The combination of liabilities and surplus items should protect you against these unfortunate changes in conditions. As we proceed with the studies, the question will be raised about the terms of the contracts, wording of the contract, and the kinds of contract which can be safely introduced.

MR. RICHARD HUMPHRYS: On the Canadian scene, the revised approach to the calculation of actuarial reserves has been based on three major studies. The first was a research report of the Canadian Institute of Chartered Accountants, published in 1973; the second was a report by a committee of the Canadian Institute of Actuaries, published in the spring of 1974; and the third was a report by a committee appointed by the Canadian Life Insurance Association, published later in 1974. In addition, a special committee organized by the Department of Insurance, with participation by the provincial Superintendents of Insurance, the accounting profession, the actuarial profession and the life insurance industry spent considerable time in studying the three reports with a view to helping the insurance departments arrive at some appropriate policy position as respect to regulatory requirements.

The revised approach to the calculation of actuarial reserves is focused on amendments to the federal insurance legislation that are now before Parliament. These amendments are intended to provide the legislative structure within which a revised approach to the calculation of actuarial reserves and asset values can be implemented.

A main objective in this distillation of the various reports and studies is to try to arrive at one statement form that will be appropriate for all pur-

poses. The accounting report contemplated a separate form for supervisory purposes, with some kind of a reconciliation between that and what might be called a GAAP statement. However, the actuary's report and the industry report pressed strongly for a single statement form and this view was supported by the Department. Generally speaking, it is unsound to speak of statutory surplus and statutory earnings on the one hand, and GAAP surplus and GAAP earnings on the other. This only serves to confuse the public even more than present practices do. The object of the exercise is to try to make the presentation of financial accounts of life insurance companies more understandable than before and this is not achieved by having two different sets of financial reports.

It was generally agreed that some improved method must be found to deal with the question of acquisition expenses and the deferral of them. The accountants wanted to define expenses that are to be deferred, limiting these to expenses that vary with and are directly related to the acquisition of new business, and wanted to show these expenses on the asset side of the balance sheet, this being the normal treatment for deferred expenses. The actuarial reserves would then be set up on the liability side, computed on the net level premium basis. The actuary's report, on the other hand, wanted to take a broader view of the acquisition expenses that might be deferred and pressed the view that the statement treatment should be as part of the reserving system. The question of recoverability of deferred acquisition expenses from future premiums is a very important point and this requires the use of actuarial techniques. This view was supported by the industry.

So far as safety margins are concerned, the accountants' report wanted the GAAP statement to be prepared on the basis of realistic assumptions and left the question of solvency margins to be dealt with by regulatory authorities through separate reporting forms. The actuary's report, on the other hand, while agreeing that the reserves should be calculated on bases that are appropriate to the circumstance of the company and with an adequate provision for deferral of acquisition expenses, proposed to deal with the question of solvency safeguards by the specific earmarking of surplus as, for example, the requirement that the reserves cover the cash surrender values or that no negative reserves be taken into account. They thus proposed to reveal the solvency safeguards rather than bury them in conservative valuation bases.

The proposal in the legislation now before Parliament would replace the present modified reserve system with a system that provides for a wide area of judgment in determining the initial expense allowance or, to use the current terminology, the deferrable acquisition expense. Acquisition expenses are not defined and their determination is left to the actuary. It is hoped that the actuaries and the accountants together will eventually arrive at some workable definition of the kind of acquisition expenses that can be properly deferred.

The legislative proposals opt for treating the deferral of acquisition expenses as part of the reserving system. Whatever is deferred will be amortized over the premium-paying period of the policy. There are, however, three major stipulations. First, nothing should be deferred that has not been incurred; second, nothing should be deferred unless there is a reasonable expectation that there are enough margins in future premiums to permit the deferred expenses to be recovered; and third, a maximum limit is placed on the deferrable acquisition expenses equal to 150% of one year's premium. This is clearly an arbitrary limit and can be changed by regulation. However,

it was thought necessary to have some maximum limit to guard against extravagance and also to keep the system under some control until some experience has been developed.

So far as valuation bases are concerned, it is left to the actuary to choose bases that are appropriate to the circumstances of the company and the business being valued. The valuation bases must also be satisfactory to the Superintendent.

The reference to the bases being appropriate to the circumstances of the company is intended to sweep in consideration of the asset portfolio. It is considered that an actuary cannot choose valuation bases appropriate to the circumstances of the company without taking into account the nature of the asset portfolio and the expected yield on it. The matching of maturities of assets and liabilities would also be relevant.

The idea of requiring that the bases be satisfactory to the Superintendent is intended to permit some control to eliminate clearly inappropriate bases. In implementing this idea, the intention is that a broad range of actuarial bases would be left to the choice of the actuary without any specific approval being required by the Superintendent of Insurance. For bases outside this broad area, specific approval would be required. This is much the same as our present system.

As part of the valuation procedure, the actuary would be expected to submit a report and include in the report a statement of opinion that the valuation bases are appropriate to the circumstances of the company and the policies being valued and that the resulting reserves are adequate. He would also be required to reveal in that report any negative reserve and any cash value deficiencies.

Once the bases are chosen, the method of calculating the reserves spelled out in the legislation gives full allowance for deferral of acquisition expenses within the constraints referred to earlier. It is to be noted that there is no specific requirement that the reserves cover the cash surrender value. In principle, therefore, the actuary would use withdrawal rates and treat the cash surrender value as a benefit. However, recognizing that this is a rather uncertain and undeveloped area, provision is made to permit the actuary to ignore withdrawal rates and substitute the cash value for the reserve wherever the reserve otherwise calculated would be less than the cash value.

The reserve calculated in this way, i.e., deferring acquisition expenses and either using withdrawal rates or making the cash value adjustment, is by way of being the minimum reserve acceptable as a GAAP reserve or for supervisory purposes. If a company wants to hold a larger reserve, it may do so as, for example, net level premium reserves. However, the so-called minimum reserve will have to be revealed in the statement whether a company uses a higher reserve or not. The increase in these minimum reserves over the year will also have to be revealed in a manner that permits the reader to adjust the income statement to what it would be if the company had not used a higher reserve.

Provision for cash value deficiencies and negative reserves, if any, will be by way of a special contingency reserve dealt with in the balance sheet but not through the income accounts.

The proposals make an effort to link together the valuation of liabilities and the valuation of assets, and to stabilize the rate of investment return. Assets will be carried at book values less an investment valuation reserve. Book values generally would be defined as the amortized values for redeemable securities and mortgages. For common and preferred shares, the book value would be the purchase price together with an adjustment (applied in bulk to the portfolio) in respect of a realized and a portion of unrealized capital gains and losses. The investment valuation reserve is intended to provide a safety margin to guard against the two main risks, (1) the risk of default on the part of security issuers, and (2) the liquidity risk arising from possible forced sale of assets to meet unexpected cash outgoes. The amount of such reserve will be the larger of 1½% of the book value or 10% of the market deficiency.

These do not call for any reserve for government bonds or mortgages. But for corporate bonds and stocks, the required reserve will be the smaller of (1) a reserve of the full market deficiency or, (2) one-third of this year's market deficiency plus one-third of the market deficiency for each of the preceding two years.

MR. GILL: In the proposals you have a number of items that are just to be revealed, for example, net level premium reserves. What would happen if those net level premium reserves exceeded the surplus plus the statement reserves? Would you declare that company insolvent?

MR. HUMPHRYS: It was felt that the scope given to individual choice in valuation bases, deferral of acquisition expenses, and the ability to use withdrawal rates, was such that it would be increasingly difficult to compare the strength of one company with another. From a regulatory point of view, we would look at the reserving bases that the actuary thought were appropriate and the reserves produced by the so called statutory method or minimum method as the basic test of solvency. Any reserve above that would in our minds represent some surplus margin.

MR. ALLAN IRELAND: (1) I have always been intrigued with the two possibilities for cash surrender value tests, the one being an aggregate test, and the other is the policy by policy test. Could the panel comment on the rationale for either one? (2) Has there been given any thought to the foreign exchange risk?

MR. HUMPHRYS: The trouble with the aggregate approach is that you cannot use the excess of reserve over a cash value of any policy to offset the deficiency on another because you do not know which ones are going to be surrendered. On the question of foreign exchange, I would say eliminate the risk. Assets should cover liabilities in matching currency.

MR. RICHARD V. MINCK:

1. Valuation

The standard Valuation Law in the United States has both advantages and disadvantages. It has been virtually self-enforcing; and it has provided a satisfactory basis for 52 insurance departments to regulate hundreds of insurance companies. There has been a very low level of insolvencies among life insurance companies under this pattern of regulation.

The system has achieved not only a number of successes but also a number of

failures, and both seem to stem from the same sources. The system is inflexible; to change it requires the enactment of amendments to the laws of 50 states, one federal district and a free and associated state. This handicap can become critical in a period of rapidly changing economic conditions. Another concern among the industry experts is in the area of deficiency reserves.

#### Deficiency Reserves

The changes to the Standard Valuation and Nonforfeiture Laws adopted by the NAIC last December and enacted by about ten states so far this year change the basis for computing reserves for policies which previously were subject to deficiency reserves requirements. The new NAIC approach defines the minimum required reserve on a policy in terms of the present value of future benefits less the present value of future valuation net premiums calculated with the reserve method actually used by the company but using minimum valuation standards of interest and mortality as prescribed by the Standard Valuation Law. In any contract year where the gross premium is less than the valuation net premium, the gross premium would be substituted in this reserve calculation. The reserve computed on this basis would be compared with that calculated according to the mortality table, interest rate, and valuation method used by the company. The larger of these two reserves would be the minimum the company could hold. This approach permits a company to use a stronger basis for valuation than the minimum required by law without being forced to put up additional reserves if its gross premiums are less than actual net valuation premiums but more than the minimum net valuation premiums specified by law. A second type of problem with existing deficiency reserves has developed in the area of renewable term insurance. There seems to be no generally acceptable guideline as to how renewable term insurance should be valued. A variety of interpretations exists between states and among companies. The differences run through the following spectrum:

- (a) Some states require reserves to be established for the current term period. Thus, the basis for the reserve calculation would be one year, five years, ten years or to some attained age depending upon the terms of the contract;
- (b) At the other extreme, some states have argued that where a term policy is renewable at guaranteed rates to some given age, the reserve should be calculated to the last age for which rates are guaranteed;
- (c) The intermediate position taken by California is that the reserves should be calculated to the last age for which the renewable rate is charged on a select basis.

There have been other variations in state practices. A single state may impose a very strict interpretation on one company but not raise the question with a different company. Some states would apply their interpretation of deficiency reserves to the total business done by a company; others apparently look only at business issued within their state.

A Subcommittee of the Council has been working to develop a satisfactory solution to what has become an increasing serious problem. Their work is still being reviewed by the appropriate committees of the Council, but their proposed solution is to recommend that:

- (1) The NAIC adopt the more liberal interpretation of the laws which would define the "premium paying period" as the current renewal period of the policy. Deficiency reserves would be viewed as being required by statute (and therefore based on 1958 CSO mortality) only for the current term period where net premiums exceed gross premiums for such period;

- (2) The NAIC urge states to require by directive the establishment of additional reserves calculated according to the "conservative method" of defining the "premium paying period" as being equal to the end of the period for which premiums are guaranteed, but using a more modern mortality table. This directive would set up a model requirement that additional reserves be held in cases where net premiums on this modern basis exceed guaranteed gross premiums for future term periods. Precedent for the use of a table other than the 1958 CSO for computing reserves exists in cases such as group conversion, guaranteed insurability, etc.;
- (3) The modern table and the maximum interest rate permitted by law be used to compute net premiums to measure future renewal period deficiencies, and also to take their present value in computing the additional reserve to be held; and
- (4) The new proposal apply to existing business, but that consideration be given to a time period, such as five years, for companies to grade in the effect of the change, in order to avoid abrupt shifts in surplus position.

This solution is not intended to be a long-term one. However, it could give needed relief in some states during the period that a longer term solution is being developed.

#### Reserves for Interest Rate Guarantees

The investment rates that companies currently obtain on new investments have made it possible to offer individual deferred annuities with very attractive guarantees. It is not uncommon to find companies guaranteeing interest rates well in excess of 6% for the first ten years of the deferral period and somewhat lower rates thereafter. Such guarantees lead to cash values that may be substantially more costly than the annuity benefits guaranteed at the end of the deferral period. The regulators felt that the Valuation Law should be clarified, so that reserves would be calculated using that guaranteed cash value which had the largest present value as of the time of calculation. There have been corresponding developments in all areas where funds are left on deposit with insurance companies. In the past, it was common to hold as the company's liability the money currently in the fund. An approach more generally espoused by current regulators is to increase that liability to the extent necessary to reflect future guarantees.

#### New Mortality Tables and High Valuation Interest Rates

The Society of Actuaries was requested by the NAIC and by the Council to appoint a committee to develop mortality tables suitable for valuation of individual life insurance policies. In both cases, the request was for separate tables for men and women. The new tables should be particularly important as a source of relief for deficiency reserves for renewable term insurance. The current round of amendments to the Standard Valuation Law changed the maximum interest rate used to specify minimum reserves from 4% to  $4\frac{1}{2}\%$  for annual premium life insurance policies and deferred annuities, from 4% to  $5\frac{1}{2}\%$  for single premium life insurance policies and deferred annuities, and from 6% to  $7\frac{1}{2}\%$  for single premium life immediate annuities and for all group annuities.

The Council supports two proposals that differ from those adopted by the NAIC last December in the valuation area. First, we support a proposal to permit companies to revalue group annuity benefits purchased prior to the

effective date of the 1972 amendments. Second, we believe that, pending future study, the valuation interest rate for single premium life insurance should be  $4\frac{1}{2}\%$ . just as it is for annual premium life insurance.

It should be emphasized that these changes are in the nature of a short run solution to the problems caused by the Valuation Law and its inflexibility during a period when new money interest rates diverge sharply from portfolio rates, and both differ substantially from the valuation interest rate used for outstanding contracts. The changes in investment returns experienced by companies would permit appreciably lower premium rates than could have been accommodated before the two sets of changes approved by the NAIC in the past five years.

## 2. Non-Forfeiture Annuity Nonforfeiture Values

Prior to last December, there was no standard nonforfeiture law for individual deferred annuities. There were four states that had individual laws establishing minimum nonforfeiture values for individual deferred annuities. However, no two were alike. In at least one case, the two sections of the law of a single state produced discontinuous and inconsistent minimum nonforfeiture benefits for individual deferred annuities.

In recent years the high interest rates and the establishment of the individual retirement annuity provision under ERISA led to a dramatic increase in the sales of individual deferred annuities. The Society Committee had recommended the development of a nonforfeiture law for individual deferred annuities and a committee of the Council developed such a bill to recommend to the NAIC which adopted it.

The bill is the first to base minimum nonforfeiture values on an accumulation of specified percentages of gross annuity considerations. (The retrospective accumulation approach was required by the development of the flexible premium annuity. Such annuities make it virtually impossible to define a minimum nonforfeiture amount in terms of future premiums or benefits.) The proposal sets minimum nonforfeiture values in terms of an accumulation at 3% interest of 65% of the net consideration for the first policy year and  $87\frac{1}{2}\%$  of net considerations for later years. Net considerations are equal to gross considerations less an annual contract charge of \$30 and less a collection charge of \$1.25 per consideration credited. The level of minimum values appears to meet the general guidelines given by the Society's Committee.

Since December, the new model law has been adopted in more than half a dozen states.

MR. HUMPHRYS: In working with the terms for these new definitions of the annuity non-forfeiture for deferred annuities, was any thought given to defining a minimum non-forfeiture value in terms other than cash value? It could have a bearing on valuation and solvency. With the annuity contracts, there is more chance of cash values being taken when interest rates are high.

MR. MINCK: There was consideration given to the problem. The law as proposed does not require a cash value, but says that if there is a cash value at any point up to the end of the accumulation period a series of cash values is required as a non-forfeiture option. It also permits paid up annuities on a more favorable basis than the cash value to give some protection against

being selected against in an adverse economic situation. The product was being marketed in terms of: give us \$100 a month and we will give you 7% interest for the first 10 years and some other percent thereafter. So it is difficult to defend requiring no cash value under these contracts. The only contracts in practice that would not have cash values will be those used for funding retirement schemes.