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LIFE INSURANCE ASSETS AND LIABILITIES AND THEIR DIFFERENCE

Traditionally, the liabilities of life insurance companies have been so conservatively valued that they contained a large margin of protection for policyholders, even if a company became statutorily insolvent. Most assets have been valued on a basis reflecting their cost.

Viewing the future in the light of today's high interest rates and expenses, can we expect traditional valuation principles, that is, net premium valuation of liabilities and amortized valuation of most assets, to provide the same assurance of company solvency as in the past?

Discussions include:

1. GAAP

2. Impact of changing asset values on cash flow

3. OECD Report "Financial Guarantees Required for Life Assurance Concerns" (Buol report)

4. Bews, Seymour, Shaw and Wales paper presented January 27, 1975, jointly to the Institute of Actuaries and the Faculty of Actuaries, "Proposals for the Statutory Basis of Valuation of Liabilities of Long-Term Insurance Business"

5. Current NAIC investigations

6. Surplus problems of small companies

7. Other pertinent developments

CHAIRMAN EDWARD A. LEW: This session is directed not only at the valuation of liabilities, which has received much attention over the years, but also at the valuation of assets, and hence at solvency standards. Existing methods for the valuation of life insurance liabilities have stood up remarkably well to the test of time, but the standards prescribed for the valuation of assets had to be suspended during the business depression of the 1930's. It would, nevertheless, appear highly advisable to aim at extensions or modifications of the existing system to accommodate it to the problems created by a busi-

ness depression, with concurrent inflation and high interest rates, rather than seek new solutions. Because of the growing diversity in life insurance company operations, some of the adjustments will probably have to be individualized. Henry L. Mencken once observed that to every complicated question there is usually a simple straightforward answer which is almost invariably wrong.

The fundamental issue for the life insurance actuary is to determine whether a company's total funds will, together with anticipated premiums and investment income, be sufficient to pay contractual obligations. The portion of the funds designated as reserves is intended to provide for future death claims, maturing endowments and similar benefits on the basis of conservative assumptions as to future death rates, investment return and expenses. In the United States these assumptions, as well as the net premium valuation method with simple modifications, have been laid down by law or regulations.

Such an approach is well designed to fulfill the long-range objectives of a going concern. It does not, however, disclose the extent of the margins included in the reserves for extraordinary hazards such as major epidemics, sharp reductions in investment values or other losses occasioned by unforeseeable developments that can render a life insurance company technically insolvent at some moment in time. To protect themselves more explicitly from such hazards, many companies allocate portions of their surplus for specified contingencies.

The historical record is clear that sharp reductions in investment values have been the principal contingency threatening the solvency of life insurance companies. Few, if any, companies have become insolvent because their reserve liabilities were underestimated by the prescribed valuation standards, but numerous companies failed during the 1930's as a result of dubious investment policies which frequently involved breaches of fiduciary trust; in the final analysis, however, most of these insolvencies were precipitated by the business depression. Furthermore, many more insolvencies were averted by the regulatory authorities when they stepped in and substituted convention values for market values of securities and instituted temporary moratoria on cash withdrawals and like demands on the companies.

While I would eschew parallels between the depression of the 1930's and the recent serious instabilities in the economy, I would still maintain that substantial depreciation in investment values and abnormal demands for cash and policy loans remain the critical contingencies today. Continued high rates of inflation are likely to depress the value of life insurance company investments and produce a mounting cash drain -- as long as interest rates in the financial markets exceed the policy loan rate by a wide margin and the yields on life insurance company investments compare unfavorably with those on other long-range investments. The financial impact of such adverse developments will vary considerably from one company to another, de-

pending on the quality of its assets, the pattern of its emerging investment maturities, and the proportion of its funds subject to cash surrender or policy loans. The multiformity of life insurance company operations militates against simple across-the-board formulas for surplus funds.

Judgments relating to the solvency of a life insurance company must descend to particulars. To make intelligent judgments about the solvency of a life insurance company, actuaries will have to take on the responsibility for certain aspects of the valuation of assets and not merely certify to the magnitude of its obligations; one of the key issues pertains to the determination of special contingency reserves to cover depreciation in investment values and the effects of negative cash flow. The actuary will have to evaluate how much margin for these contingencies is already included in the reserves held by the company and also be in position to estimate the probabilities of depreciation in investment values and of negative cash flow under the circumstances of the particular company. I believe the Society of Actuaries should establish an Investment Experience Committee to conduct studies of actual investment performance from which probabilities of passing from an amortized or book value to a market value basis could be derived for various categories of investments. Such studies would provide the statistical data necessary to compute more meaningful contingency reserves to cover asset depreciation and the consequences of negative cash flow.

Greater participation by actuaries in problems of investment valuation does not require the actuary to become an investment specialist. His role with respect to the investment risk in analyzing investment performance and assisting in the formulation of investment policy ought to parallel his role with respect to the mortality risk in analyzing underwriting performance and assisting in the formulation of underwriting policy.

The financial implications of different kinds of investment policies, involving varying levels of liquidity and investment return, as well as changing demands for cash and policy loans, can now be explored thoroughly with the aid of computerized model office programs. The model just developed by the Joint Committee on the Theory of Risk furnishes a powerful instrument for investigating the needs for special contingency reserves suited to the circumstances of a particular company. This model can also be used to examine the effect of sharply rising expense rates, which may highlight a major weakness in GAAP accounting due to its emphasis on deferring the amortization of acquisition expenses over a longer period of years in the face of continuing inflation.

John Wooddy will discuss valuation of reserves under GAAP, the computerized model of a stock company constructed by his committee, and the problems of relating changing asset values to cash flow.

Russ Collins will tell us about the findings of the Buol report which expounded European views on the valuation of assets and liabilities.

Robin Leckie will report on a discussion of assets and liabilities which recently took place at a joint meeting of the Institute of Actuaries and the Faculty of Actuaries. The new British approach to valuation reflects to some degree the shortcomings of their regulatory legislation in dealing with companies in trouble. British actuaries appear to have turned to valuation standards which are more appropriate for companies that may have to be wound up, in contrast to American valuation standards which are more applicable to going concerns.

John Eden will deal with the special problems of small companies in respect to their needs for surplus funds.

Finally, Tom Kelly will give us an account of some of the thinking of the NAIC Technical Subcommittee on Valuation and Nonforfeiture Value Regulation

MR. JOHN C. WOODDY: The industry Audit Guide for stock life insurance companies, published by the American Institute of Certified Public Accountants has been in effect for a couple of years. It prescribes generally accepted accounting principles for stock life insurance companies, which principles lead to balance sheets and income statements which differ from the statutory ones.

The stated objective of the Audit Guide is to produce a fairer presentation of a company's year-to-year income than is obtainable from statutory statements. The comment is frequently encountered that company solvency is protected by other means, namely, statutory statements and insurance department supervision, so that audit guide preoccupation with income is a reasonable attitude. Nevertheless, GAAP statements do include both balance sheet and income statement, so it is pertinent to examine GAAP assets, liabilities and their difference. I do not propose to discuss technical aspects such as items which might be treated as either an asset or a liability offset but which do not affect surplus. Also I mention only in passing that certain items included in Exhibit 13 of the statutory statement as non-admitted assets are given full balance sheet status in the GAAP statement. The most important difference between statutory and GAAP statements, both in its financial effect on the companies involved and in the minds of those who have studied the matter in depth, is the GAAP provision for an asset referred to variously as unamortized acquisition costs, deferred acquisition costs, amortizable acquisition costs. A good deal of actuarial and accounting attention has been focused on criteria for determining the amount of this asset. Again, I do not propose to dwell on technical controversies which have arisen over this subject but simply note that there is a sizeable body of opinion which holds that this item is too readily subject to manipulation by company management for the purpose of achieving a desired pattern of earnings emergence without reference to basic principles. Parenthetically I might note that, given the differences of opinion as to what the basic principles should be, manipulation is a not surprising outcome.

Policy reserves under GAAP are required to take account of mortality, interest, lapse and expense and to include provision for the risks of adverse deviation. The simplest way to look at the GAAP reserve at any point in time would be to treat it as the present value of future expenses and benefits, including surrender benefits, minus the present value of future valuation premiums, where such valuation premiums include provision for all expenses, surrender benefits and death benefits. Inasmuch as an actual GAAP statement must have the provision for unamortized acquisition expense on the asset side of the balance sheets, the so-called GAAP benefit reserve must be calculated somewhat differently from the simple expression previously stated, although the net effect on surplus of splitting the reserve in such fashion is zero. For purposes of this discussion it is easier to refer to the total policy reserve as defined previously, that is, present value of all future benefits and expenses minus the present value of total future valuation premiums. Use of this approach here is not intended as any commentary or argument as to which method gives the most informative public presentation of the financial position of a stock life insurance company.

In this discussion I wish to focus on this quantity. The first point is that the valuation premiums referred to in the formula are required to be calculated on the same assumptions as the present value of benefits and expenses and, as mentioned above, these valuation bases are required to include provision for the risks of adverse deviation.

The GAAP valuation premium may or may not equal the gross premium. If the GAAP valuation premium is less than or equal to the gross premium, no further adjustment to the valuation process is required. If the GAAP valuation premium is greater than the gross premium, an immediate charge is called for equal to the present value of the excess of future GAAP valuation premiums over future gross premiums. The Audit Guide provides that once the GAAP valuation bases have been established for a given category of policies, they shall not be changed in the future unless there is reason to believe that the bases are inadequate. In such case, revised bases are to be introduced and the resulting increase in reserve is to be recognized as a charge in the current year.

To recapitulate, when we look at the question under discussion, that is, assets, liabilities, and their difference, in light of the GAAP description, and focus on the largest single item in most life companies' balance sheets, namely, the policy reserve, the item which, as far as level-premium, permanent-plan life insurance is concerned, most demands the actuary's skill and expertise, and, in fact, accounts for the existence of the profession, we find a system which is flexible, which requires the actuary to put his judgment on the line and not fall back on statutory requirements; we find a system which has no give if initial assumptions are found to be too conservative but which does require immediate recognition when initial assumptions are found to be too liberal. We find a system which is, in effect, a gross premium valuation method if the valuation premium calculated on the GAAP as-

sumptions is greater than or equal to the actual gross premiums on the policies, but which was not designed as a gross premium valuation system per se. However, we also find a system which depends upon, for instance, a mortality assumption "based on realistic estimates of expected mortality ..... provision for adverse deviations should be included." It is my personal judgment that at least 75% of the life insurance companies in the United States do not have sufficient mortality experience to confer statistical significance on the results of a mortality study.

The Audit Guide, in discussing withdrawals, states, "Reserves determined in conformity with generally accepted accounting principles may be less than aggregate cash values." Even for a large company, predicting future lapse rates or, what may, in certain economic conditions, be the same thing, rates of taking out policy loans, is very difficult. The subject of the interaction of market interest rates with the valuation process could call forth a book all by itself. I will content myself with the observation that, during the course of the slow rise in market interest rates from 2% or 2½% up to the neighborhood of 5% to 6%, it seemed clear that the increase was beneficial to both policyholders and companies, and to both life insurance and annuities. With present market rates and values of high quality bonds held by life insurance companies, the risks to which those companies are exposed have become more complex. Along with the reduction in actuarial value of even U. S. government bonds with low coupon rates, has come the increased risk of insolvency for which the code name is "Penn Central." Discussion of estimates of future expenses would be rather anticlimactic at this point so I will refrain.

Just about two years ago, the Board of Governors of the Society charged the Joint Committee on Theory of Risk with the responsibility of developing the technique for providing for the risks of adverse deviation as called for in the Audit Guide. Pursuant to this charge, the Committee conducted investigations in several directions but focused primarily on development of a life insurance company model. Dr. Harry Markowitz, a consultant to the Committee, who has since joined the IBM Research Center, was commissioned to undertake this work. He, with the help of Dr. Barbara Markowitz, completed the programming and is about to finish what we hope will be the final debugging. The model was designed to investigate, insofar as a model can do so, the questions implicit or explicit in the comments I have just made. The period of time simulated begins on any specified January 1. The model company may or may not have existing business in force. The user of the model specifies the rate of sale of new business, which can be changed from time to time as desired. Numbers of policies sold may be deterministic or random in accordance with a normal distribution with mean and standard deviation specified by the user. Deaths may be deterministic or stochastic in accordance with a table of expected mortality rates specified by the user. There is similar provision for lapses. Gross premiums are collected and death benefits, surrender benefits and expenses are paid. All of the rates involved may be changed during the course of the simulation. The investment section is rather elab-

orate although limited to bonds. The user specifies the market interest rates by duration to maturity for purchases and sales separately and may change the market rates during the course of the simulation. The model itself does not have any internal mechanism to provide random variation in the bond market; in fact, one of the most serious conceptual difficulties the Joint Committee on Theory of Risk has wrestled with is what is meant by an adverse deviation in interest rates. Twenty years ago a stock company which assumed 3% interest in calculating its non-par premiums and which earned only 2½% interest would have suffered a serious adverse deviation but probably would not become insolvent. Today, a sudden and sustained rise in market interest rates to, say, 30% would probably bankrupt most of the life insurance companies in the country. That, however, is a digression. To return to the interest provision in the model, the user is free to put in whatever pattern of variation in future interest rates he feels is appropriate and can vary the array of rates each year or oftener. The model is not equipped to generate Penn Central episodes. With a little ingenuity, however, a substantial asset loss could be caused to occur at some point in time specified by the user.

The idea of the model is that it may be run many times with the same input, and on the basis of random deaths and lapses, in order to get a probability distribution of results. To this extent it operates like a general life insurance company corporate model with statutory valuation reserves and with federal income tax calculated if desired.

An example, designed to be run as a demonstration at the Workshop on Use and Development of Corporate Models, running concurrently with this session, is based on one year's issues at a single age of a ten-year endowment. The first run is based on some conventional assumptions, consistent with the gross premium. The second run increases the lapse rates by 10% for the sixth to tenth years of the simulation. The third run reverts to original lapse rates but increases the earned interest rate from 6% to 7%. The fourth run incorporates both lapse and interest increases, and the fifth run adds to this a loss equal to about 10% of assets in the seventh year of the run.

SOFASIM provides a powerful tool for investigations into the subject of life insurance assets, liabilities, and their difference, in complex situations not amenable to projections, even on a deterministic basis, by manual methods. SOFASIM does the job on a stochastic basis and is ready, willing, and able to run as many trials of any specific input as the user has money for.

MR. RUSSELL M. COLLINS, JR.: The single most important responsibility of the actuary is to design and manage insurance systems in such a manner that those systems have a high probability of continued existence. The fundamental requirements for such systems of solvency, stability, and continuity apply to all insurance operations, wherever in the world they may be located.

An important study of solvency standards for life insurance companies was commissioned in late 1966 by the Organization for Economic Cooperation and Development (OECD) in order to promote stable international insurance operations. The primary objective of the study was to determine a minimum level of solvency for life insurance operations of the participating countries, although the member country governments would not be bound by the recommendations resulting from the study. However, the results of the study are expected to have a significant impact on insurance supervision in those countries.

A Working Party was set up under the Chairmanship of Mr. Buol, at the time a member of the Swiss Insurance Supervisory Service, and included members of the Insurance Supervisory Services and insurers of the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. The Working Party was assisted by a Sub-Group of actuaries chaired by Mr. Ammeter (Switzerland) and comprising Mr. Drude (Germany), Mr. Nieto (Spain), Mr. Stewart (United Kingdon) and Mr. Toren (Sweden).

The Working Party's report - Financial Guarantees Required for Life Assurance Concerns - commonly referred to as the "Buol Report" - was published in 1971 by the OECD.

Leaving aside the application of the recommendations contained in the Report to the individual countries involved, we will discuss the following topics treated in the Report: (1) valuation of reserve liabilities, including selection of the interest assumptions and establishment of a special risk reserve, (2) the valuation of investments covering reserve liabilities, and (3) the interdependence of the two.

VALUATION OF LIABILITIES

The report differentiates between valuation of liabilities in what it calls "cases amenable to the classic actuarial technique" and other cases. The first category would include permanent insurance, where the mathematical reserve, if prudently determined, is adequate to meet the danger of high excess mortality. These are cases where the savings element predominates and the mortality factor plays only a secondary role. The second category includes cases where the mortality factor predominates, such as portfolios which are too small or have not aged long enough to contain a sufficient savings element, or types of insurance which contain virtually no savings element such as most term insurance, accidental death benefits, etc.

In the case of permanent insurance, the Working Party concluded that mathematical reserves, calculated using sufficiently conservative assumptions, would be adequate and concentrated on the question of choosing appropriate assumptions. The key assumption, of course, is the rate of interest. The

Working Party recommended the following method for determination of the valuation rate of interest:

First, an "unstrengthened" interest rate is calculated as follows:

(a) First, the average effective rate of yield on the life company's assets over a sufficiently long period of time (20 years is recommended) is determined.

(b) Then, either this average yield, reduced by 10%, or, alternatively, a weighted average (two-thirds of the lowest annual rate of yield in the period plus one-third of the most recent rate) is chosen.

(c) Finally, in order to assure that, in spite of a possible downward trend in the rate of yield, the use of either formula suggested in (b) does not result in too high a valuation rate, the condition is added that the unstrengthened interest rate can never exceed 90% of the most recent rate of yield.

The Report recognized that this method may not always produce appropriate results and provides for exceptions made by the supervisory authority.

The Working Party recommends a rate of strengthening the "unstrengthened" interest rate which is based on the theory that a strengthening should be more substantial when the absolute level of the valuation rate is high than when it is low. Therefore, a strengthening of 20% of the "unstrengthened" rate as calculated above is recommended. Attention is devoted to demonstrating that this strengthened rate will produce safety margins adequate to absorb significant variations in mortality and management expenses as well.

The case of term insurance was studied by the Sub-Group headed by Mr. Ammeter. The report of this Sub-Group is contained in an appendix to the Report. A paper written by Mr. Ammeter on the same subject was also translated and published in ARCH 1972-3. The Sub-Group suggests the establishment of a special reserve, in addition to any mathematical reserve called for, according to a formula, developed by risk-theoretical methods, as follows:

$$u = V^{P^1} + V^{\bar{S}} = \frac{0.025}{\lambda} \sum P^1 + \frac{8}{\lambda} \bar{S}$$

where $\sum P^1$ is the total premium for the portfolio (net of reinsurance ceded)

λ is the safety loading contained in P^1

$\bar{S}$ is the average claim amount

The first term is proportional to the premium volume and the second term is not, but rather depends solely on the expected average claim amount. Thus, the second term functions as a fixed minimum reserve amount. For large portfolios, the fixed term is very small in comparison with the variable term.

The Working Party further recommended that, in the case of portfolios where term and similar insurance is a small proportion of the total portfolio, the special reserve could be graduated according to the relative proportion that the term premium bears to the total premium. In such cases, adverse experience in the term portion of the portfolio could hardly endanger the solvency of the entire portfolio. With respect to reserve method, while modified reserves are, of course, well entrenched in North America, the Working Party could not agree on the desirability of permitting so-called "Zillmerization" of the mathematical reserve. This refers to the adjustment of the reserve in the first year for at least a part of the amount of acquisition expenses and the amortization of this amount over the premium-paying period.

VALUATION OF ASSETS

The Report covers the assets side of the solvency question in terms which are relatively standard. It begins with an interesting comment on the essential difference between asset and liability valuation -- that, whereas valuation of liabilities is an internal factor which may be directly influenced by insurers and regulators, the asset picture is most directly influenced by external considerations. Combined with this point is a stickier one insofar as OECD recommendations apply to its member countries -- that is, that the quality and availability of differing forms of investment varies considerably from country to country. This fact, combined with the very different forms of regulation between the countries, forced the Working Party to outline its recommendations on asset valuation in the broadest of possible terms and still, as we shall see, the terms specified were not held to apply in at least one country for very special reasons.

A brief outline of the treatment of asset valuation in the Report is perhaps helpful.

The Report recognizes the use of conservative valuations for solvency purposes, and recommends a system of "normal" values to be used for solvency testing for various categories of assets. Such "normal" values are suggested to be not less than the "balance sheet" values, by investment category as well as for the overall investment portfolio.

The specific solvency values recommended seem conventional to American readers - for example, par values are accepted for adequately secured debt instruments, as long as they yield at least $\frac{1}{2}\%$ more than the interest rate used in reserve valuation, with a single exception in the case of common stocks.

A pair of conservative stock valuation methods are suggested. The first of these is a straight 20% reduction of value from the actual market value; the second recommends a variable rate of reduction, to be at least 10% off market value, but a greater reduction in periods when the overall market is moving upward, measured over the past 3 years. The actual formula of the second method is to value each security at $.90 \times \hat{\iota} \div \iota$, where $\hat{\iota}$ is the average of the stock market price index at the end of the past three years, ι is the price index at the last year-end, and the $\hat{\iota} \div \iota$ ratio is limited to a maximum of 1.

For other investments, the suggestions are understandably those consistent with a long-range, continuing business philosophy.

In light of the suggested solvency "normal" value standards, the Working Party then reviewed the actual methods of valuation used in the member countries and concluded that, in ten of the countries participating, conditions of solvency were met by valuations already used in regulatory statements, except in the case of stocks, where the new formula was suggested.

The Buol Report also included a chapter on the application of solvency requirements to individual companies, and concluded that solvency established on an overall basis by the supervisors in the Company's home domicile should suffice for solvency for other OECD member countries, though, naturally, each company should continue to meet local licensing conditions.

IMMUNIZATION AND THE BRITISH

A summary of the United Kingdom's position on the matter of solvency guaranteed through the use of the British "immunization" procedures is included in the Buol Report. Although not specifically designated as such, eleven paragraphs of the Report are essentially a separate report on the investment markets and the asset valuation procedures with which immunization - the matching of the terms of liabilities and of assets - can be applied. A good summary of the process of immunization is included in this section, building to the position that, when immunization is applied, the valuation of liabilities may be based on the current yield of the assets. In the British view, the need for solvency asset values greater than the current market value of those assets is directly a result of the use of standard valuation bases, a practice which has not - until very recently - been even suggested in the United Kingdom. When the actuary may revalue the liabilities in terms of a current asset market, and where immunization is applied, solvency is automatically assured.

Such a procedure, as the Report notes, is possible in the United Kingdom because of the existence of long-term investments enabling the immunization process to operate. It is also suggested that the valuation procedure suggested for stocks - the fixed or variable reduction from market value - need

not apply when, as in Britain, stocks are held for the long term, and where considerable investment in such vehicles occurs.

Despite the study of the British system, the Report concludes its study of asset valuation with the observation that the immunization principle of matching assets and liabilities may well work where all of the required conditions exist - the necessary investment vehicles, and the lack of regulatory restraints - but that it does not "lend itself to general application on the European Continent." However, for application of solvency on a multilateral basis, a company operating on a satisfactory basis using such matching within its home domicile should be exempted from certain of the restrictions on the choice of the technical rate of interest suggested in the Report. Moreover, once considered solvent within its home domicile, its operations elsewhere would be considered acceptable.

HOW DOES THE BUOL REPORT AFFECT AMERICAN PRACTICES?

The Buol Report is the basis for a distinctive system for establishing solvency in many of the continental European countries. We believe that it offers members of the Society a valuable insight into the systems of solvency that we use ourselves.

Solvency determination is essentially a blending of conservative and realistic valuations in a coherent system which supports special insurance considerations. The blending of these factors - the design of a solvency system coordinating asset and liability valuation with due regard for local conditions - is what makes a solvency system work.

Consider the British position on immunization. Because of the special investment market, and the far lower level of guaranteed optative benefits (such as surrender values), gross premium valuation at the current market yield, properly immunized for asset maturities, may provide a consistent, workable solvency system.

In the United States, with our special emphasis on contractual guarantees of a rigid nature, the appearance of full asset support for fixed, defined-at-issue liabilities is more important than it is to the British. And our European colleagues - as the Buol Report indicates - fall somewhere in between.

In each of the three cases, distinctly different approaches are taken, each consistent within itself, consistent to local insurance principles and contracts issued, and each is a viable solvency system. However, pressures are building in both the United Kingdom and here in the United States, requiring us to adapt our traditional solvency system to meet new conditions.

On this basis, we recommend review of the Buol Report for new insight into alternative systems of solvency control.

(Editor's Note -- The remarks presented by Mr. Collins were prepared jointly by Mr. Collins and Mr. David G. Halmstad.)

MR. ROBIN B. LECKIE: Solvency problems of life insurance companies, whether statutory or real, are not confined to the United States. I would like to outline some recent developments in the United Kingdom and briefly touch on solvency considerations in Canada.

The United Kingdom is the last of the major insurance areas to adopt a statutory basis for the valuation of assets and liabilities. The move away from the traditional British approach of "freedom with disclosure" has been triggered by a number of company failures plus the strain of uncertain economic conditions. There is also a desire to be in step with the solvency standards of the EEC and the "six principles" adopted.

The proposed basis was introduced last year by the U.K. supervisory authority - the Department of Trade - in a consultative note to the industry. Since then, regulations for the valuation of assets have been published, while the suggested basis for the valuation of liabilities has been passed to the Institute of Actuaries for their consideration. This has triggered the Bews, Seymour, Shaw, Wales paper entitled, "Proposals for the Statutory Basis of Valuation of the Liabilities of Long-Term Insurance Business" presented and discussed at Faculty and Institute meetings in January.

The major significant features of the solvency requirements in the United Kingdom are as follows:

1. The valuation of assets are to be at market, or where there is no market value, at discounted future earnings employing in the discounting process an appropriate current rate. Thus, amortization of mortgages and bonds is not permitted.

2. A net premium basis is to be used for the valuation of liabilities with a suitable first year modification of not more than 3% of the face amount. In addition, recognition of inadequate provisions for renewal expenses is expected.

3. The interest rate to be employed for the valuation of liabilities is derived from the actual yield on the assets of the company.

4. The valuation should cover guaranteed cash values, policy by policy.

I would like to comment on each of the major features of the U.K. test. First, the collapse of two life insurance companies, coupled with severe economic uncertainty has given to the government and supervisory authorities

a certain fatalistic mood which has triggered a break-up value approach. It follows that market values have become the test for assets. It would seem strange in North America for this to apply to mortgages and to government-guaranteed bonds and other high grade securities; however, not entirely unreasonable in the U.K. where guaranteed cash values are rare. I should note that the overall test is intended to ensure a reasonable standard of adequacy rather than a mere demonstration of solvency; that is, the test should give a warning of trouble, not report on it after the fact. Unfortunately, the current mood of the U.K. authorities has tended more to concern for immediate benefits than continuation of a going concern, thus to a considerable extent defeating this premise.

The second feature, the use of a net premium valuation method rather than a gross premium method, has been very controversial. The government has been concerned that the continued practice of discounting future profit distributions would be inappropriate for a solvency test and might lead to improper stripping of the apparent surplus of life insurance companies by general insurance parent companies. Further, the net premium method follows from the premise stated above that the test should act as a warning signal. The net premium method is also one of the EEC's six principles.

Critics of the net premium method point out that the method is not sensitive to changes in mortality and, further, that it is not possible to secure consistency between the valuation of assets and liabilities particularly when interest rates are high. It is apparent, however, that U.K. authorities are prepared to forego pure matching for the conservatism of the net premium method.

This leads to the third feature, the interest rate to be used in the valuation of liabilities. The rate is to be no more than 90% of the current earnings rate of the company's assets with a 0.8% minimum differential. The actual rate employed may be less subject to the judgment of the actuary. Thus a reasonably close relationship between the valuation of the two sides of the balance sheet is achieved, at least as compared to North American methods. Unfortunately, a test of this nature runs into many difficulties. An example is whether a distinction should be made between the rate of interest earned on existing assets and a reinvestment rate, presumably lower, at which future income may be invested. The paper finally concluded that the current rate was the most conservative and most appropriate.

One problem in using a portfolio rate for valuation of liabilities is that it could encourage a weakening of the quality of the portfolio. The replacement of a low-yielding highly-secured asset by one with a greater return but the same current market value would automatically increase surplus, created through the reduction in the value of liabilities. Nor can the future return on equities be guaranteed, and to assume that today's dividends will be met in the future may be unduly liberal for a test of solvency.

The fourth characteristic of the British proposal, to cover cash values, seems unreasonable in context with the other features. A pure market value test to meet the immediate contractual call of the liabilities implies either the possibility of total surrender or borrowing of all policies, or, in the case of insolvency, the payoff of cash values (or whatever lesser amount is available). Both are inconsistent with the going-concern principle of life insurance practices in America. While guaranteed cash values as we know them are rare in the United Kingdom, many U.K. companies started issuing single premium high cash value savings plans a few years ago taking advantage of a tax loophole. These had dreadful consequences as interest rates rose and asset values fell. It was this that triggered one company failure and contributed to another. Small wonder that guaranteed values are viewed with suspicion and a break-up value test has resulted. Nevertheless, it would seem reasonable to allow the actuary some discretion for employing withdrawal rates in his valuation of benefits which include traditional guaranteed cash values.

Turning to Canada, we find a system akin to that of the United States, built on the long-term contractual obligations undertaken by the insurer. Regulation is defined through the Canadian and British Insurance Companies Act and administered by the Federal Department of Insurance.

The statutory basis for computing the minimum reserve is set out in the Act. It specifies a maximum rate of interest of 3½% for insurance and 4% for annuities. A number of standard mortality tables are also specified. The Superintendent of Insurance has power to approve other mortality tables and higher rates of interest; however, the actuary asking for these must justify his request. Rates of interest as high as 7%, or even more, have been used in recent years for some annuities. The net premium method is employed with or without the Canadian modification. One of the features of the Canadian system is the requirement of an Actuary's Certificate certifying to the adequacy of the reserves held. Considerable reliance is placed upon this certificate and the professional judgment of the actuary that signs it.

The basic test for assets is market values but with amortization for mortgages and government securities. There is also a modified three-year averaging provision for other bonds and shares to provide relief during temporary periods of depressed markets or unusually high interest rates.

At the present time, there are no GAAP reporting requirements for life insurance companies in Canada, although the subject is under study. Fortunately, the four major groups - accountants, actuaries, companies and regulators - are working together to resolve the multiple needs of sound reporting and solvency requirements within one statement. No specific proposal has yet been forthcoming; however, it appears likely that the future reporting of Canadian companies will include:

1. Similar treatment for par and non-par, stock and mutual.

2. The use of a new modified reserve system with the first year modification equal to a percentage of the first premium or of the actual initial expenses incurred, whichever is the lesser.

3. A redefinition of asset valuation to require amortized values for all bonds and to permit or require a valuation of equities and real estate such that there will be a defined emergence of realized and unrealized capital gains into earnings.

4. Extending the strong reliance placed on the professional judgment of the actuary. His statement may be expanded to include consideration of assets and solvency.

5. Setting up the statement in such a way that revenue earnings will reflect more commonly accepted accounting principles while the balance sheet can continue to emphasize solvency.

Having examined the U.K. system and the system in Canada and having considered the problems we are encountering today, what lessons are there for us? First, it is important to note that the actuary has no higher professional obligation than to ensure that the long-term contractual commitments administered will be met.

The second point to note is that we have only been doing half a job with respect to solvency. We have not paid sufficient attention to the assets. We should be doing more in assisting our companies in formulating appropriate investment policy and measuring asset performance.

Another lesson to be learned is that to develop a statement with a true or immunized relationship between assets and liabilities is not a simple matter. There are many pitfalls.

A fourth lesson, I believe, includes the need to re-examine our policy of providing guaranteed cash values. Undoubtedly one of the strengths of our system has been the guarantees we provide; however, these guarantees have become somewhat unrealistic with today's high interest rates. Perhaps, for example, we should modify the underlying interest guarantees to something like 6% or 7% or even 10%. We should also reconsider the design of some of our policies. Perhaps life cycle is the answer.

Finally, we should remember we have worked with a system that has stood up to almost every test put to it in the past 100 years. Any changes should be carefully considered.

MR. JOHN P. EDEN: Discussions of small company surplus problems usually focus on the level of acquisition costs and other elements affecting the profitability of the business being issued, and mention is made of the importance of developing financial projections to indicate surplus requirements, based on anticipated volume and other characteristics of new business, mortality, lapses, etc. Without diminishing the importance of this practice, as such is not the intent,- on the contrary, I believe such planning to be not only desirable but necessary, and not just for small companies - my comments are concerned with one area which deserves more attention from actuaries than it has received in the past, namely, "asset failure." For the purpose of this discussion, let me define the term "asset failure" in a quite loose and general manner to mean a loss of statutory surplus caused by a decrease in the value of an invested asset.

Two categories of asset failure are considered here: 1) a sale of an asset in order to meet cash needs, the net proceeds of such sale being less than the amount at which the asset was carried in the financial statement; 2) a decrease in the value at which an invested asset continues to be included in the statement.

The liquidation of investments becomes necessary when a company experiences a negative cash flow. Such a situation may have been anticipated as in the case of a relatively new company where disbursements can exceed the sum of premium and investment income for a period of time, or such a circumstance may develop unexpectedly for a variety of reasons. But even when anticipated, the negative cash flow may be more severe than expected, on account of a heavy demand for policy loans, cash surrenders, or higher-than-expected claims costs; a similar situation could be caused by lower cash income than was forecast, due to a drop in investment income or planned asset liquidations yielding lower proceeds than expected. The important point is to realize that we are concerned with the liquidation value of an asset which may not only be lower than the value at which it was included but significantly lower than its market value.

With the second category of asset failure, we are talking about a going - concern type of asset value which would generally be amortized book or market value, depending on the type of asset. We could include here asset sales made purely on the basis of investment decisions, since, if the actual sales were to create a surplus problem, such sales would presumably not be made. However, if an investment decision cannot be carried out because of its effect on surplus, then,while we have avoided an immediate surplus problem, we may have created a potential investment problem with a related potential surplus problem.

A more detailed presentation would most likely include further categories of asset failure; in particular, a distinction should perhaps be made between the situation where the liquidated asset was previously carried in the statement at its amortized book value as against a lower value approximating

its market value. Investment decisions and the actual mechanics of the disposition of an asset may or may not involve the actuary, and the revision of statement values of invested assets is, of course, outside the control of company management. Nevertheless, with their ability to cause surplus difficulties, these elements have to be taken into account when evaluating a company's future surplus needs.

I should make mention of the Mandatory Securities Valuation Reserve, if only to let the audience know that I have not forgotten about it. I purposely defined asset failure as a capital loss causing a decrease in statutory surplus, in order to cover situations where the MSVR was not sufficiently large or otherwise could not offset the capital loss.

The above phenomena, as well as many other adverse financial occurrences which are usually cited as small company problems, are not unique to small companies. What makes these occurrences "small company surplus problems" is the ability of a more mature and diversified company to absorb an unfavorable occurrence, which could endanger the solvency of a small company with its smaller amount of surplus and less diversified activities.

This brings me to the matter of solvency standards on which I would like to comment briefly.

The observation is sometimes made that the solution to the solvency problem is simply to increase minimum capital and surplus requirements. I do not believe that this is the answer; in fact, I do not think there is a simple solution. Going back many years, perhaps small company operations were fairly uniform and most of them fitted into the mold of the typical small company; however, today this is just not the case. There are many kinds of small company operations with widely differing surplus needs, and it seems to me that this should be taken into account.

One noteworthy development is the establishment by the NAIC in 1972 of a statistical reporting system, applicable to property and liability insurance companies and life insurers. This program consists of a series of computerized test calculations based on information contained in a company's Annual Statement. First used in connection with the 1972 Annual Statement, the tests were thereafter modified and made more effective prior to their application to the 1973 Statement. Some of the tests are a measure of the financial performance during the previous year, and others are intended to evaluate the solvency status of the company as of the statement date. For each of the tests, a cut-off point exists beyond which the results are considered exceptional and indicative of the need for further analysis.

Each company receives a copy of its own test results which should be of considerable benefit to its management. An on-going program of this kind, to be effective, has to be capable of carrying out the tests and making the answers available on a timely basis; furthermore, the system should be flex-

ible enough to be responsive to changing characteristics of the business.

MR. THOMAS J. KELLY: The National Association of Insurance Commissioners (NAIC) Technical Subcommittee on Valuation and Nonforfeiture Value Regulation has been charged by the NAIC to:

(1) Review valuation and nonforfeiture value legislation and regulation.

(2) Identify the problems currently encountered and recommend practical solutions which can be implemented now.

(3) Reconsider the fundamental purposes of statutory regulation in the light of the present state of the knowledge and technology of actuarial science, study systems alternative to the present, using theories and technology not previously available, and eventually recommend some course of long-range development of statutory regulation.

At the present time the NAIC Technical Subcommittee reports only to the (C3) Life Subcommittee and is, therefore, restricted to investigating the valuation and nonforfeiture value regulation associated with general account life insurance and annuity business. Eventually such regulation must also be considered for other lines such as health insurance, credit insurance, separate account business and the various fire, casualty, and automobile liability lines of business. Of course, the fire, casualty, and automobile liability areas are outside our present expertise as life insurance actuaries. For this reason, the Technical Advisory Subcommittee on the Long Range Aspects of Valuation Regulation includes a number of review and commentary members associated with such other lines of business so that the Advisory Subcommittee can have the advantage of direct communication with persons knowledgeable in those fields. When those areas are opened up for exploration by the NAIC, a nucleus of advisory persons will then become available with some experience as to what has been going on in the life insurance and annuity area.

The Technical Subcommittee has organized some advisory committees, and is in the process of organizing some additional ones, in order to obtain specialized expertise as far as possible, in the specific areas of our investigation. As a further development, due at least partly to budgetary considerations, the Technical Subcommittee has scheduled regional meetings to coincide with the meetings of the Society of Actuaries.

The original NAIC Task Force has been expanded into a Technical Subcommittee to increase the number of states participating in the study of valuation and nonforfeiture value regulation. Thanks to the efforts of the staff of the American Life Insurance Association, a review of the developments in valuation and nonforfeiture value regulation since the days of the Guertin Committee has been accomplished and is summarized as an attachment to the Task

Force Report presented last December to the NAIC, which will appear in the Proceedings of the NAIC reporting that meeting.

The following have been included in considerations of problems with the present statutory policy reserve system:

(a) Even though statutory reserves are being held, solvency may not be assured by the present system if asset values are inadequate to match and support the policy liabilities with respect to the future timing of benefits, withdrawal values, and dividends. It appears that the present system may not provide sufficient consideration of the possibility of this inadequacy.

(b) The present system may not be responsive enough to changes in mortality, morbidity, expenses, interest rates, or other factors involved in the operations of a life insurance company.

(c) The present system does not directly produce earnings for life insurance companies that are comparable to the earnings reported for companies in other industries.

(d) The present system ignores the variation of the credibility of experience with respect to the number and relative magnitude of the separate risks assumed with respect to investments, mortality, and morbidity.

Eight immediate problems have been identified and are to be considered by eight separate Task Forces within the membership of the NAIC Technical Subcommittee. Some of these Task Forces may require special professional actuarial advice on specified technical problems, and will then ask the NAIC Technical Subcommittee to request such advice from either the American Academy of Actuaries or the Society of Actuaries depending on the nature of the request. The immediate problems to be studied are:

(1) Premium Deficiency Reserves

(2) The "Uniform Percentage of Gross Premium" Rule

(3) General Account Index-Related Products

(4) Nonforfeiture Value Regulation Expense Assumptions

(5) Split Life and Related Plans

(6) Deposit Term and Related Plans

(7) Deferred Annuities and Deposit Funds

(8) Life Cycle Plans and Other Recent Developments

At the present time, a technical advisory subcommittee to consider the long-range aspects of valuation is in the process of organization. This advisory subcommittee will report directly to the NAIC Technical Advisory Subcommittee on Valuation and Nonforfeiture Regulation, and is charged specifically with finding practical solutions and testing these solutions for three problems:

(1) The matching of assets with cash flow requirements.

(2) The definition of how much surplus should be retained as a margin of safety under the present system for determining statutory solvency.

(3) The definition of alternative methods of determining statutory solvency.

In connection with the first of these problems two questions have been asked:

(a) How should the asset portfolio vary with the nature and distribution of insurance and annuity business from which such assets are generated and are required for the maintenance of such business in a statutorily-solvent position with a reasonable margin for surplus?

(b) What practical rules or regulations, if any, can be devised to assure that an asset portfolio will be able to support a particular distribution of business with a reasonable degree of confidence?

Answers to these questions, of course, will require the NAIC Technical Subcommittee to define criteria for a "reasonable margin for suplus" and "a reasonable degree of confidence." These definitions may well depend on the results of other assignments to the Long Range Valuation Technical Advisory Subcommittee, the American Academy of Actuaries, or the Society of Actuaries.

The definition of the surplus required as a safety margin under the present system for determining statutory solvency poses a number of questions:

(a) How can risk theory, through the introduction of the chance of fluctuation and consideration of different economic conditions in the various parameters (investment return, mortality or morbidity or claim losses, voluntary withdrawal rates, and expenses including taxes) be used to establish the surplus which should be retained under varying degrees of confidence?

(b) What is the effect of the application of credibility through considering both the magnitude and number of risks involved, as well as the ratio of the maximum to average amounts of risk, both with respect to claims experience and with respect to investment experience, and also considering the effect of reinsurance?

(c) How can the findings with respect to risk theory and credibility be translated into some practical working rules to be used as a basis for drafting model regulations or legislation?

Answers to these questions require the NAIC Technical Subcommittee to define the predetermined chance for ruin to be established for study purposes, and to determine the priority of risk structures to be studied. These definitions will require technical information for which the NAIC Technical Subcommittee will most likely ask the Society of Actuaries for assistance.

In exploring alternative valuation systems, aside from the obvious question of what alternative systems are available, to be answered are:

(a) To what extent should risk theory be considered in the definition of alternative valuation systems?

(b) To what extent should credibility of experience, considering the magnitude and number of risks involved for both claims and investments, be used in defining an alternative system?

(c) Should the present valuation system be retained for situations where there is minimal credibility?

(d) How do the advantages of the simplicity of the current net premium valuation system compare with the anticipated advantages of alternative systems, such as, increased confidence that reserves are not excessive and the hope that required surplus associated with such alternative systems will improve the credibility that the company's solvency will continue?

The NAIC Technical Subcommittee will specify the alternative methods to be tested, the limits of the values of the various valuation parameters and the form of such limits, and the acceptable criteria for credibility of experience. This will require some technical assistance from the Advisory Subcommittee and the Society of Actuaries.

As you can see, the NAIC Technical Subcommittee on Valuation and Nonforfeiture Valuation Regulation is embarked on a vigorous and comprehensive

program to bring about more effective regulation in these areas. Hopefully, the immediate problems can be resolved within a year or two. However, some of them are chronic symptoms of deficiencies in the present system and may require some redefinition of the present system before they will completely disappear. The NAIC Technical Subcommittee has been organized as a fairly permanent committee with the prospect that the current studies into the long-range aspects will take some time to complete, and that problems will continue to arise which will require some form of current action.

MR. CHARLES F. B. RICHARDSON: The Buol Report left me with an impression very different from that implied by the remarks of the panel members. I found it singularly unhelpful in regard to valuation problems in the United States and have filed with the NAIC Committee some detailed criticisms of the report. Among other things, I pointed out that most of the approaches referred to in this report are entirely unsuitable in a situation where guaranteed cash values and availability of policy loans at fixed interest rates are involved. I also questioned the validity of the procedure suggested for determining contingency reserves, which was confined to term insurance. This seems absurd when one considers the various other types of liabilities which involve considerable risk and fluctuations in experience, for example, certain types of health insurance, funds such as premium deposits withdrawable in cash without penalty, policy loans resulting in asset losses, and so on. This report is not at all realistic, having regard to the enormous variations that occur in practice between companies in regard to the various types of life, annuity and health insurance business written, distribution by line, age, duration, type of underwriting, retention limit in relation to surplus, and vulnerability to cash demands. The theory of immunization appears to me quite unrealistic under today's economic conditions because of the unpredictability of the emergence of liabilities.

I am most fearful of the suggestion that consideration should be given to the abandonment of the net premium valuation system, and substitution of some form of gross premium valuation. Recent experience with GAAP should make us extremely wary of this. It is reported that even some of the security analysts who, with the accountants, got us into GAAP, do not now trust the earnings results and are tending to pay more attention to statutory earnings. The enormous scope for judgment, good or bad, pessimistic or optimistic, the absence of uniform standards and methods of expense allocation, lapse assumptions and so on, which GAAP and any other form of gross premium valuation offers, should make us think very hard before embracing a gross premium valuation as the test of solvency.

The suggestion that an attempt be made to establish surplus standards that would vary in accordance with the degree of risk in a company's portfolio seems to me to be fanciful and unrealistic, particularly in view of the enormous variations in the minimum capital and surplus requirements in the several states, ranging from ridiculously low requirements in some states to reasonably adequate requirements in only a very few. The important problem

here is to get these minimum requirements raised to adequate levels. There is certainly not enough expertise to administer any requirements based on risk theory and I regard this type of discussion as impractical and wishful thinking.

I believe that current minimum cash value requirements, still based on 3½% interest in many states and nowhere based on higher than 4%, are too high, except in the early years. Under the economic conditions that we see today and which seem likely to prevail for the foreseeable future, minimum cash values should not be based on an interest rate lower than 4½%, and I urge that this fundamental question be given very careful study. It is unrealistic to base early cash values on the acquisition expense rates to be expected in a marginal stock company operation, which was the basis of current laws. Consumerism demands more than that and I believe early cash values should be increased and first year expense allowances reduced. In particular, the $20.00 per thousand factor which invites abuse should be removed if the adjusted premium approach is continued.

Another urgent matter is the revision of State laws which all too frequently require policy loans to be guaranteed at 6% interest, 5% still in New York, which in today's economic environment is shockingly discriminatory between those who borrow and those who do not.

In considering changes in valuation standards, a study should be made of the deficiency reserve requirements under term policies to provide reasonable expense margins in today's inflationary conditions. Any such reserves should be based on the minimum standard, not on the actual valuation basis used.

In closing, I make a plea for a practical, realistic approach to these matters and a strong effort to reach solutions, both to the nonforfeiture value and valuation problems, that can be properly administered by the very limited supply of technical personnel available in the state insurance departments. These problems demand broad, practical solutions rather than theoretical and idealistic approaches. In any event, one cannot legislate wise management.

MR. WOODDY: I am impressed by the contrast between the circumstances we face today and those that confronted the life insurance business up to perhaps five years ago. I'm referring to the current high level of interest rates. To pick an extreme example, if, tomorrow, market interest rates should go to 30% and stay there for a few years, a large proportion of the life insurance companies in this country would go bankrupt. In general, people think the higher the interest rate the more favorable the financial results for the industry. That was true when rates were gradually creeping up from 2 or 3 percent to 5 or 6 percent; but now we're getting to a position where we might have to sell securities in a market where interest rates are much higher than those at which we bought them. "Immunization" is fine under circumstances when it works. I doubt whether anyone preparing a schedule of expected cash requirements for a company would include the likelihood that within a year

the company might have to liquidate half of its assets. As long as actual cash flow follows reasonably closely the projected cash flow, "immunization" is a wonderful tool; but, if cash flow cannot be forecast, then "immunization" may turn out to have been a trap.

MR. JOHN C. MAYNARD: In his address, Dr. Friedman was pessimistic about the future. He feels that inflation, uncertainty, and the continuation of high and fluctuating interest rates will persist. With such a prospect, policyholders might act so as to cause serious financial strains on their companies.

Healthy policyholders might surrender their policies, invest the proceeds at current high rates, and apply for term insurance. Unhealthy policyholders might apply for large policy loans and re-invest the money at current rates. The strains and inequities which would result give rise to deep concern. There is little that can be done about business in force, but the design of new policies can take such contingencies into account.

I would like to address a question to the panel. For future new business, is it desirable that there should be minimum statutory and guaranteed contractual cash and loan values?

MR. WOODDY: Attempts to provide variable policy loan interest rates and the suggestion just made not to guarantee cash values may be viewed as examples of "throwing out the baby with the bathwater."

Life insurance policies offer many benefits which policyholders have found useful, and that is part of the attractiveness of the American life insurance product. Meeting the obligations involved in such benefits may turn out to be more difficult than was contemplated when the policies were first designed; but that's our business as actuaries. We are supposed to be the experts in developing complex life insurance contracts. We became quite proficient in determining premiums and other arrangements that enabled life insurance companies to pay death benefits over long periods of time. Now we are facing new contingencies such as paying cash values when it's embarrassing to pay a cash value, or granting loans at an interest rate much lower than we can get in the market; but these too are risks and risk is our business. If the consuming public wants such benefits and is willing to pay for them, and I would emphasize "is willing to pay for", then our job is not to tell the public it can't have the benefits. Our task is to figure out how to price the benefits so that they continue salable and life insurance companies are not damaged by them.

CHAIRMAN LEW: I would like to respond further to Jock Maynard's rather pointed query which relates to financial and mortality antiselection on guaranteed cash and loan values. If we regard <u>such</u> antiselection as serious, we should make provision for it. The dividend declarations made for this year may indicate how many mutual companies view such antiselection as

a threat. If we accept the pessimistic outlook expressed this morning at face value, then we ought to react by taking a more conservative stance on dividends.

MR. DAVID M. HOLLAND: In Distribution of Surplus, Messrs. Maclean and Marshall observed "true 'profits' are determined solely by the premiums actually payable and the conditions actually experienced during the entire existence of the whole group. No other consideration, such as temporary fluctuations in the value of assets or changes which may be adopted in calculating the values of liabilities - in particular the policy reserves - can, in any way, affect these true profits". Since the above quote was originally written, there have been changes in the life insurance industry (*e.g.*, a new Federal income tax law) so that the incidence of profits may well affect the ultimate profitability of a block of insurance.

A change in valuation methods could have significant effects, both primary and secondary, throughout the entire U.S. life insurance system. A primary effect of a change in valuation methods may be a change in surplus for a given company, but the change in surplus may create a further secondary change in the demand for surplus (or retained earnings) for uses such as:

(1) Dividends

  (a) to policyholders

  (b) to stockholders

(2) Capital

  (a) to finance expansion of insurance operations

  (b) to develop non-insurance affiliates or subsidiaries

(3) Federal Income Tax

Other areas affected by changes in valuation bases might be the structure of nonforfeiture benefits and the pricing of life insurance products.

Because the secondary effects of changes in valuation methods could produce significant changes in other components of the life insurance system, it seems important that the life insurance industry be represented in deliberations on revising valuation methods. Therefore, I would like to ask Mr. Kelly if the NAIC Technical Subcommittee is totally unbiased and looking exclusively at the problems of valuation from a regulatory point of view, or if there is some other industry advisory committee which is looking after the secondary effects changes in valuation methods may have in the industry?

MR. KELLY: That is really an inviting set of questions. We have tried to get a cross section of actuaries. We, of course, look to the actuaries to realize that they have to be advisors. Actuaries are professionals so we don't expect too much bias. We've included actuaries from small companies, large companies, stocks, mutuals, and also from other fields such as education.

We just don't know what the outcome is going to be as far as the level of surplus is concerned. If surplus is increased for a particular company, yes, there may be demands on this. On the other hand, there may be other demands if surplus is reduced. There may be demands by regulatory authorities if the reduction is below some minimum statutory level. I don't know what the outcome may be. This is some way down the road from where we are at the present time.