IMPLICATIONS OF PROPOSED REVISIONS
OF THE STANDARD VALUATION AND
NONFORFEITURE LAWS

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1. From the viewpoint of the Regulator

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    b. Areas where clarifications are needed
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    e. Possible long range changes in regulatory process

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    e. Timetable for short term and long term solutions to fundamental
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    f. Application of lessons from pension operations to other lines

MR. JOHN O. MONTGOMERY: The views expressed here are those of a member of
the Society of Actuaries holding a regulatory position in one state
insurance department. They do not necessarily represent the views of that
department, any other insurance department, or the National Association of
Insurance Commissioners (NAIC).

My comments will cover certain problems with current laws and problems of
clarification through the regulatory process. Possible solutions, some of
which are already being studied, will also be reviewed. First of all, I
believe that reserve and nonforfeiture value regulation should extend to all
types of life and health insurance, including credit insurance, and to all
deposits associated with any of these insurance lines. Eventually, even
some casualty lines might have to be considered for such regulation. For
this reason I have also included comments concerning health insurance and
credit insurance.

A. Problems with Current Legislation and Regulation

(1) A great problem with the present laws is the length of time
     required to update them when conditions warrant a change. First,
     the NAIC must draft model legislation; they may take from two to
     five years. Then the various states must enact such legislation,
     which may take many years. Some states have not yet enacted the
     original Guertin law, and quite a few have not yet enacted the
     amendments recommended in 1972.

(2) The model legislation has been amended so many times that the
     structure has become very complex. Adherance to traditional word-
     ing has produced some sentences with as many as 180 words.

(3) The model statute for health and disability insurance is disorganized,
     and model legislation for credit life and credit disability needs
     clarification. Probably such legislation should take the form of
     enabling acts, under which the commissioners promulgate regulations.
     In this event model regulations are needed. (In some areas, model
     regulations are currently being considered by the NAIC Technical
     Task Force.)

(4) Statutes should specify reserve and nonforfeiture value calculation
     methods and the assumptions to be used in those calculations.
     They should not include interpretations or clarifications of the
     methods or assumptions. These interpretations should be covered by
     NAIC guidelines. Until the NAIC adopts such guidelines regulators
     may have difficulty making consistent interpretations.

(5) Other areas of regulation are weak. These could be strengthened
     by expanding the Annual Statement Instructions for actuarial
     opinions covering certain information shown in the Blank. Two
     examples illustrate this point.

     (a) Substandard Insurance:

          A statement that the actuary has reviewed the underwriting
          standards applicable to the business for which the actuarial
          opinion is given. This could be supplemented by an
          indication of the standard premiums written on substandard
          lives as well as the substandard premiums. Also included
          could be an indication of the proportion of such business
          written on term life insurance plans and on guaranteed issue
          plans.

     (b) Open-end plans and other unusual plans:
          A description of such plans could be included.

B. Areas Where Clarifications are Needed

    Clarifications, or model interpretations, usually should appear as
    Actuarial Guidelines in the NAIC Field Examiner's Handbook, rather than
    being incorporated into model legislation. Further experience may
    require additional clarifications, and changes in legislation are a
    very slow process. The NAIC Technical Task Force For Valuation and
    Nonforfeiture Value Regulation now follows a 3-step procedure to
    implement such guidelines.

1. The Task Force submits a guideline to the appropriate NAIC
    Subcommittee (Life, Accident and Health, Credit Insurance, etc.)
    for their consideration.

2. Six months later, at the next NAIC meeting, the Task Force recom-
    mends that the guideline be adopted by the NAIC Subcommittee and
    that it be sent to the NAIC Field Examiner's Manual Subcommittee.

3. After 6 more months, at the next NAIC meeting, if the guideline has
    been approved by all appropriate NAIC Committees, it will be
    incorporated in the NAIC Field Examiner's Manual.

It takes at least a year from the time a guideline is first proposed until
it is finally adopted and included in the manual; this should permit
enough time for review by all concerned. The Proceedings of the National
Association of Insurance Commissioners will indicate which guidelines are
in process and which have been adopted. No guidelines have, as yet, been
submitted to the NAIC. Guidelines which may be recommended for the first
time at the December 1977 session of the NAIC include the following.

(1) For individual deferred annuity contracts, the maturity value for
     the purpose of determining interim cash surrender values would be
     the cash surrender value at maturity; this maturity cash value
     would be at least equal to the minimum cash surrender value payable
     in accordance with the model individual deferred annuity nonforfeiture
     law.

(2) A guideline defining annuities covered by the model individual
     deferred annuity nonforfeiture value law and specifying when that
     law applies and when the life insurance nonforfeiture value law applies.

(3) For valuing policies where valuation net premiums exceed actual
     gross premiums collected, the maximum permissible valuation interest
     rate and the applicable mortality table specified would be those
     in effect at the date of issue of such policies. The valuation
     method contained in the NAIC's December, 1976 model legislation for
     valuing life insurance policies with net premiums exceeding actual
     gross premiums is a change in method of reserve calculation and not
     a change in reserve standards.

(4) A guideline on the valuation of Group Annuity Deposit Administration
     Funds. This will be patterned after the present New York regulation;
     to be effective nationally only requires adoption by a few states.

A guideline which may be recommended for the first time at the June,
1978 NAIC session covers renewable term life insurance reserves. This
is to be patterned after the recent Texas Regulation.

Other guidelines may be recommended for:

(1) Deposit term and deposit whole life plans.

(2) Guaranteed issue and limited underwriting business.

(3) Clarifying when a plan is to be considered as a modified premium
     plan and when it is to be considered as term followed by whole life.

(4) Life cycle, indexed plans and various open-ended plans.

(5) Claim reserves for health and disability insurance.

(6) Reserves for credit life and credit disability insurance.

C. Expected Changes in the Regulatory Process

Within the next five or ten years, model legislation is expected for:

(1) Revision of the standard nonforfeiture law.

(2) Revision of the standard valuation law, to include new mortality tables for life insurance and possibly for annuities.

(3) Standard valuation and nonforfeiture laws for health and disability insurance including tables for the valuation of such benefits.

Guidelines are expected for most of these items, as well as in some other areas. Also expected is a fairly extensive revision of the NAIC Annual Statement Blank with respect to health and disability insurance benefits.

D. Time Table for Reform of the Valuation Process

I have already mentioned a time table for some of the guidelines. In other areas the time table is as follows.

(1) For Life Insurance:

1978 Annual Meeting of Society of Actuaries
- Presentation of a new valuation mortality table.

June 1979 - Final review of the new mortality table by the NAIC
            Technical Task Force.

December 1979 - First exposure draft of the revision of the standard
                valuation and nonforfeiture laws.

June 1980 - Final draft of the revision of the standard valuation
            and nonforfeiture laws.

December 1980 - Adoption by the NAIC of the model revisions of the
                valuation and nonforfeiture laws.

(2) For Disability and Health Insurance:

June 1978 - First draft of new disability table to be used until
            Society of Actuaries develops a table.
          - First draft new medical expense tables.

December 1978 - Final draft of model revisions and nonforfeiture
                legislation and regulation for health and
                disability insurance.

June 1979 - Adoption by NAIC of model legislation and/or regulation.

(3)   Credit Life and Credit Disability Insurance:

December 1977 - Adopt 1978 Credit Disability Claim Cost Tables.

December 1978 - Exposure draft of credit life and credit disability model valuation and nonforfeiture legislation and/or regulations.

E.   Possible Long Range Changes

1.   Flexible interest assumptions based on current investment experience.

   a.   It is not likely that interest assumptions will be changed retrospectively on older issues except to a more stringent basis. Retrospective liberalizations would create more regulatory problems with respect to the disposal of reserves thus released to surplus. Revised interest assumptions will apply only to policies and contracts issued after such revision.

   b.   Additional information would be required in the annual statement blank with respect to yields on new investments.

2.   A regulatory test for minimum surplus based on such factors as the risks assumed, distribution of business, and reserve held. Again, additional annual statement information is needed, as well as considerable research into the factors contributing to surplus accretion or depletion.

3.   Flexible mortality assumptions may be needed. It is not clear at all how this could be accomplished.

4.   Changes in financial reporting in addition to those already mentioned above could include:

   (a)   Revision of the NAIC Annual Statement Blank -

      (1)   Assets and liabilities on a statutory basis.

      (2)   Operations on a Generally Accepted Accounting Principles Basis.

      (3)   A bridging schedule between assets and liabilities on one hand and operations on the other.

   (b)   As a result of possible difficulties with some holding company structures a consolidated blank for such entities will probably be required. This would lead to staggering prospects for reporting by some of the larger, widely diversified, conglomerates. If this does not occur through state regulation it may come as the result of Federal action. Under this form of statement, minimum surplus tests will also be needed.

MR. CHARLES GREELEY: When John Montgomery mentioned short-term and long-term goals just now, some of you may have been surprised at the great amount of time it takes to accomplish change. Let us take the changes in the life nonforfeiture area, for example. There are three stages:

1) Basic research and development of principles. The Unruh Committee did this in a period of about three years, --and I assure you that this was fast going in view of the complexities of the subject.

2) Exposure, discussion, and compromise, among people associated with the insurance business (including the membership of the Society of Actuaries at large). This includes input from the hundreds of companies represented by the Council of Life Insurance, and, of course, discussions and work with the regulatory people -- first, John Montgomery's Task Force, followed by the NAIC as a whole, working toward model legislation. This process of molding principles to the practical real life situation also requires three years or so. Again, this timing can be considered very successful in view of the great divergency of interests represented.

3) Finally, the legislative process of enacting the NAIC Model Bill in each of the 50 states and Washington, D.C. is bound to take a minimum of three to four years.

Thus a ten-year time frame from beginning to end is what should be expected realistically. I am glad to be able to report that we are more than half way there already.

I will now touch briefly on three or four items of particular interest in the nonforfeiture and valuation area. One item which concerns me is that the new standard nonforfeiture law on annuities introduces an element of rate regulation. That law is on a retrospective basis while the law for life insurance is on a prospective basis. That fact alone would not make any difference, but the fact that the retrospective formula relates minimum cash values to gross premiums does. This is a significant step from the principles under the life insurance law under which companies with different levels of gross premiums may nevertheless have the same minimum cash values. This new direction in the annuity area was adopted because it was recognized that the public would not accept anything else. This step has obvious significant implications for the future of other areas of the insurance business.

Turning to the new nonforfeiture law for life insurance, one of the matters that needed to be taken care of after 30 years or so was an up-dating of the factors of interest, mortality, and expenses. Bob Chmely will be speaking later on some aspects of the interest questions. As to mortality, aside from up-dating to reflect more recent experience, an important practical question is whether separate tables should be developed by sex or whether the continuation of an age setback (perhaps increased to six years) would be satisfactory. We eagerly await the conclusions of the Special Society Committee formed to work on this area. Until then, the 1958 CSO will continue to be used, but with a permissive six-year age setback for females in those states adopting the NAIC model. In this connection, John Cook has prepared an extension of the 1958 CSO Table which extends the six-year setback to the young ages in a manner similar to the original construction needed for the three-year setback.

As for expenses, I assume that you have all read Charlie Richardson's paper, with which I fully agree. The decrease in the per 1000 factor and the increase in the per dollar of premium factor reflect changing experience. The numbers reflect the experience of middle-cost companies (rather than high-cost, as under the Guertin formula). I will ask this audience, as I have asked others on several past occasions, for their opinions on this choice of expense factors.

There is one more aspect of the new nonforfeiture law that I would like to touch upon. On the one hand, it attempts to open the door to new ideas and new products by introducing a degree of flexibility. At the same time, it attempts to close certain loopholes by correcting technical deficiencies in the law. For example, the expense allowances will no longer be based on the first premium but rather on the average premium;-- thus deposit term and deposit whole life would be required to offer significant cash values right from inception. As another example, the equivalent level amount will be based on no more than ten years, so as to prevent an excessive immediate allowance based on increase in insurance amount at a late duration.

MR. ROBERT M. CHMELY: Changes in the United States economy have affected the pension business in many ways. For example, due to high rates of inflation during the last decade, benefit levels have been increased. More recently, persistent high unemployment has contributed to the funding weakness of multi-employer plans. Yields obtainable on bonds and mortgages (the principal investments of insurance companies) have increased from historically low levels of the 1940's to the high levels now being experienced. Many economists believe present high yields on long term investments are related to current and anticipated future inflation. The purchase price of an annuity is affected significantly by changes in the interest assumption. A 1% increase in the interest assumption will produce about a 7% decrease in the cost of an immediate life annuity purchased at age 65, and almost a 20% decrease in the cost of a deferred life annuity issued at age 55 to commence at age 65.

In recent years, insurance companies have underwritten a substantial volume of non-participating annuities. Much of this has resulted from plan terminations; in addition, plan administrators have taken advantage of current high interest rates to transfer plan obligations to insurance carriers at historically low prices; finally a large volume of business has come from election of annuity options by participants who received distributions under thrift plans and profit sharing plans. Annual Statement valuation standards have created difficulties for insurers that respond to this strong demand for non-participating annuities. Purchase prices of these non-participating annuities have reflected investment yields currently available on long term investments----8% and higher in recent years. However, reserves for business issued since 1973 have been computed at interest rates of 6% or less. Thus, the reserve established for new business is considerably larger than the amount of the purchase price, causing a significant reduction in annual statement surplus.

Let us briefly examine the effects on surplus of the issue of non-participating annuities. For this purpose we will ignore mortality and loading, and will assume that purchase rates are based upon an interest assumption of 8% with reserves based upon an interest assumption of 6%. For each $1,000,000 received by the insurance company for immediate annuities, a reserve of about $1,150,000 must be held, producing a "surplus strain" of $150,000.

Some companies have annually underwritten more than $100,000,000 of non-participating annuities during the past several years and have accumulated surplus strain of $100,000,000 and more from this source since 1973. Unfortunately, a number of companies writing this business are near the limits of their capacity to absorb this strain. In fact, several companies have been forced to curtail their sales of non-participating annuities.

The surplus strain problem is not a recent phenomenon. Prior to 1973 when reserves for the Annual Statement were typically valued at $3\frac{1}{2}\%$, purchase prices for non-participating group annuities were being valued at interest rates ranging from about 4% to 6% or so. This interest rate differential caused a relatively high surplus strain at issue. Some of this strain is still present on the companys' books.

The surplus strain problem is not restricted to non-participating business. Many purchases made under participating group annuity contracts also produce significant surplus strain because the purchase prices are often considerably lower than the required annual statement reserves. In addition, unrealistic annual statement reserves may have a significant undersirable impact upon a company's dividend practices. For, in order to avoid destributing as dividends any amounts that may be needed to support statutory reserves, the pattern of reserves employed for dividend purposes must be quite similar to that used in the annual statement. As might be expected, contractholders have difficulty understanding why dividend reserves should be valued at conservative interest rates like $3\frac{1}{2}\%$ or 4% when the average interest rate being earned on the underlying funds is often greater than 6%.

The basic problem with current valuation standards for group annuities is that they are too conservative for current conditions and are not responsive to rapid economic changes. The other panelists discussed the time required to identify new problems and to develop solutions that are acceptable to the companies, to supervisory authorities, and to state legislatures. For example, in 1973 the NAIC approved as a minimum valuation standard for group annuities, the 1971 Group Annuity Mortality table and 6% interest. Four jurisdictions have still not approved that standard.

Some changes in valuation standards are now in progress. In December 1976, the NAIC approved the following increases in statutory interest rates for minimum reserves, as well as raising interest rates permitted in nonforfeiture benefit calculations:

(1) for group annuities and individual single premium immediate annuities, from 6% to $7\frac{1}{2}\%$;
(2) for single premium life insurance and single premium deferred annuities, from 4% to $5\frac{1}{2}\%$; and
(3) for all other life insurance and individual deferred annuities from 4% to $4\frac{1}{2}\%$.

These changes are being enacted in the States at a reasonable pace. By the end of September, 12 states, including New York and Illinois, had enacted the required amendments. Appropriate legislation was pending in 2 other states.

The NAIC-approved changes will reduce surplus strain on group annuity benefits purchased in the future. They do not solve the problems caused

by redundant reserves for pre-1977 group annuity benefit purchases. However, New York and 4 other states have added a remedial amendment to their statute; this allows group annuity benefits purchased before 1973 to be valued at 5%. Certain of these states require use of the 1971 Group Annuity Mortality table, if 5% interest is assured.

The current legislation will provide short-term relief from some of the more urgent valuation problems, but it will not adjust automatically to changing economic conditions. One possible long-term solution would involve flexible interest and mortality rates that depend on then-current experience, with appropriate margins for safety. This approach might require different interest margins for each type of product. A more radical solution would be to value all liabilities on a basis consistent with current interest rates and "most probable" mortality. For consistency assets would be valued at current market value. "Cash flow matching" is another possibility. If asset and liability cash flows are perfectly matched (the so-called "immunized" state) the interest rate assumed does not matter. However, to obtain a meaningful approximation of surplus, assets and liabilities must be valued on a consistent basis. Valuation procedures used in Canada and Great Britain might serve as models for practices in the United States. The new Canadian valuation law will allow the actuary to choose a reserve basis appropriate to the circumstances of his company and its inforce policies, subject to approval by the Superintendent of Insurance. Guidelines as to acceptable valuation bases will be issued by the Superintendent. British procedures include a gross premium valuation, and allow both the reserve bases and policyholder equities to vary with current interest rates. Implementing any such long-term solution will require at least 10 years.

While I have confined my attention to reserve problems affecting the pension business, it should be kept in mind that these pension problems also influence other lines. Proper valuation of life insurance liabilities affects the cost of insurance, the distribution of divisible surplus and equity between classes of policyholders. Ultimately, it provides the basis for testing the solvency of some of our more important financial institutions.

MR. JOHN H. COOK: The 1958 CSO Table with a 3-year age setback is a permissible basis in most States for valuation and nonforfeiture benefits in policies insuring females. Mortality rates at young ages, from a strict application of the 3-year age setback, would present anomalies. Female rates would be higher than male rates at ages 10 and under, and there would be no clearly defined female rates at ages 0, 1, and 2. These anomalies were eliminated by a Female Extension of the 1958 CSO Table that, along with a description of its derivation, was published on pages 1060 to 1069, of TSA Volume XI.

The objective of that extension was to provide rates for female ages 14 and under which: (1) grade smoothly into the 1958 CSO Table set back 3 years at ages 15 and over (i.e., male ages 12 and over); (2) are based on the same general method as used in constructing the 1958 CSO Table; and (3) start with the best estimate of female mortality rates, corresponding to the experience mortality rates shown in the 1958 CSO Basic Table. A similar extension was developed for the 1958 CET Mortality Table.

The 1958 CSO Table with a 6-year setback for females is now needed. The same anomalies that arose from strict application of a 3-year setback also occur with a 6-year setback. To avoid these problems, a new Female

Extension of the 1958 CSO Table has been developed. This new table was designed to provide rates for female ages 14 and under that would: (1) grade smoothly into the original Female Extension (three-year age setback) of the 1958 CSO Table with an additional three-year age setback at ages 15 and over (i.e., original female ages 12 and over); (2) be based on the same general method as used for the original Female Extension; and (3) start with the best estimate of female mortality rates that corresponds to the experience shown in the 1958 CSO Basic Table.

Review of the derivation method used in the Female Extension of the 1958 CSO Table for a 3-year setback shows that the loading added to basic rates was three cents per thousand less than it had been for the 1958 CSO Table itself. This recognized that the loading formula at young ages for the 1958 CSO Table increased by one cent per thousand per year of age up to age 38. A six-year age setback of the 1958 CSO Table should reflect a further reduction of three cents per thousand in the loading. At the very young ages there is no basis for a revised estimate of the appropriate female experience mortality rates. Based on these considerations, mortality rates at very young ages under a 6-year setback should be the values from the 3-year setback table reduced by three cents per thousand.

Table 1 shows mortality rates after an additional 3-cent reduction in the loading factor as well as those that result from a further 3-year age setback. Based on inspection of columns 2 and 3, rates were adopted for a 6-year age setback as follows. For issue ages 10 and under, the rate is equal to the rate in column 2. For issue age 14 and over, the rate is equal to the rate in column 3. For issue ages between 10 and 14, rates were obtained by straight-line interpolation. The final rates are tabulated in column 4.

As a smoothness test for the new rates, first, second, and third differences were calculated. Table 2 shows these values. Apart from unavoidable distortion in differences for ages 0 and 1, the absolute values of third differences are generally zero or 1 cent per thousand.

This new table is on an age-nearest-birthday basis. Age-last-birthday rates were developed by assuming a uniform distribution of deaths, over the year from age-nearest-birthday x to x+1, with appropriate rounding. Age-last-birthday rates are shown in Table 3.

For extended term insurance, an extension of the 1958 CET (set back 3 years) for females at ages 14 and under was constructed by adding .75 deaths per thousand to the Female Extension of the 1958 CSO Table. A 6-year setback Female Extension of the 1958 CET Table has now been developed in a similar manner, by adding .75 deaths per thousand to the Female Extension (6-year setback) of the 1958 CSO Table. These rates are shown in Table 4. Also in Table 4 are rates for a Female Extension 6-year setback of the 1958 CET Table on an age-last-birthday basis. These rates, on an age-last-birthday basis for the CET Table, were developed in the same manner as the age-last-birthday rates for the CSO Table.

TABLE 1

1958 CSO MORTALITY TABLE - 1000 q_x

Age Nearest Birthday	1958 CSO with 3 year Setback (1)	Column (1) minus .03 (2)	Column (1) with an Additional 3 year Setback (3)	1958 CSO with 6 year Setback (4)
0	6.20	6.17		6.17
1	1.67	1.64		1.64
2	1.41	1.38		1.38
3	1.35	1.32	6.20	1.32
4	1.29	1.26	1.67	1.26
5	1.24	1.21	1.41	1.21
6	1.19	1.16	1.35	1.16
7	1.15	1.12	1.29	1.12
8	1.12	1.09	1.24	1.09
9	1.11	1.08	1.19	1.08
10	1.11	1.08	1.15	1.08
11	1.12	1.09	1.12	1.09
12	1.14	1.11	1.11	1.10
13	1.17	1.14	1.11	1.11
14	1.21	1.18	1.12	1.12
15	1.26	1.23	1.14	1.14
16	1.32	1.29	1.17	1.17
17	1.39	1.36	1.21	1.21
18	1.46	1.43	1.26	1.26
19	1.54	1.51	1.32	1.32
20	1.62	1.59	1.39	1.39

TABLE 2

Age Nearest Birthday	(1) 1958 CSO Mortality Table with 6 year Setback 1000 q_x	(2) Δ Col. (1)	(3) Δ Col. (2)	(4) Δ Col. (3)
0	6.17	- 4.53	4.27	- 4.07
1	1.64	- .26	.20	- .20
2	1.38	- .06	.00	.01
3	1.32	- .06	.01	- .01
4	1.26	- .05	.00	.01
5	1.21	- .05	.01	.00
6	1.16	- .04	.01	.01
7	1.12	- .03	.02	- .01
8	1.09	- .01	.01	.00
9	1.08	.00	.01	- .01
10	1.08	.01	.00	.00
11	1.09	.01	.00	.00
12	1.10	.01	.00	.01
13	1.11	.01	.01	.00
14	1.12	.02	.01	.00
15	1.14	.03	.01	.00
16	1.17	.04	.01	.00
17	1.21	.05	.01	.00
18	1.26	.06	.01	
19	1.32	.07		
20	1.39			

TABLE 3

1958 CSO MORTALITY TABLE WITH 6 YEAR SETBACK - 1000 q_x

Age	Age Nearest Birthday	Age Last Birthday
0	6.17	3.91
1	1.64	1.51
2	1.38	1.35
3	1.32	1.29
4	1.26	1.23
5	1.21	1.18
6	1.16	1.14
7	1.12	1.11
8	1.09	1.09
9	1.08	1.08
10	1.08	1.08
11	1.09	1.09
12	1.10	1.10
13	1.11	1.12
14	1.12	1.13
15	1.14	1.15
16	1.17	1.19
17	1.21	1.23
18	1.26	1.29
19	1.32	1.35
20	1.39	1.43

TABLE 4

1958 CET MORTALITY TABLE WITH 6 YEAR SETBACK - 1000 q_x

Age	Age Nearest Birthday	Age Last Birthday
0	6.92	4.66
1	2.39	2.26
2	2.13	2.10
3	2.07	2.04
4	2.01	1.99
5	1.96	1.94
6	1.91	1.89
7	1.87	1.86
8	1.84	1.84
9	1.83	1.83
10	1.83	1.83
11	1.84	1.85
12	1.85	1.86
13	1.86	1.87
14	1.87	1.88
15	1.89	1.91
16	1.92	1.94
17	1.96	1.98
18	2.01	2.04
19	2.07	2.10
20	2.14	2.17

MR. CHARLES A. PEIRCE: On behalf of Charles Howell, I am presenting the
written discussion which was distributed to you. It reflects both his own
thoughts and work by a subcommittee of the ACLI Actuarial Committee. A
Society committee is currently doing other research into a theoretical,
ideal melding of surplus needs, asset valuation and reserve structures.
What is suggested here is a point approximately half way along the spectrum
between that theoretical ideal and the current, crisis-oriented, method of
setting valuation standards. Very briefly, the proposal is for a dynamic
valuation structure, where the maximum interest rate depends on market,
industry, or individual company earnings rates. Margins between earnings
rates and valuation rates would depend on product characteristics. Generally,
as interest rates rise, required reserves, on existing as well as new annuities
would decrease; but you should note that the reverse holds also and might
prove frightening if minimum reserves were being held. In addition,
immunization concepts could be worked into this structure. Charles Howell's
discussion suggests certain basic principles for implementing the dynamic
valuation proposal.

One subtlety is not covered in detail by the basic principles. That is the
interdependency of investment risks of different insurance products.
Because of this dependency, total investment risk for a company is likely to
be less than the sum of the risks associated with the separate products.
The significance of this reduction in risk should be further explored.

MR. A. CHARLES HOWELL: In this discussion, it is assumed that assets and
liabilities are consistently measured. As compared with current statutes
a dynamic valuation structure would more accurately reflect investment
risk differences among the various life insurance and annuity products.
It would also respond more readily to changes in the economic climate. Such
a dynamic valuation structure should require reserves that are adequate for
fulfillment of future obligations with a high degree of probability, but
which are not so excessive as to unnecessarily increase the cost of insur-
ance and annuity products. Unlike current statutes, which base minimum
reserves for existing business on projections of the future made at partic-
ular moments in the past, a dynamic valuation structure would reduce
minimum reserve requirements when warranted by actual and projected experi-
ence, but would increase minimum reserve requirements when future risks
appear to be significantly greater. As a basis for developing a dynamic
valuation structure, the following principles are proposed.

I. The objective of statutory minimum reserve requirements is to measure
overall adequacy of an insurance company's reserves to meet future contrac-
tual obligations.

II. For a company as a whole, minimum required reserves should be based on
interest assumptions that reflect yields the company expects to earn, in the
future, on funds available to support the business, reduced by appropriate
margins for adverse contingencies. A single, total company, interest
assumption may be a convenient measure. However, it should be supported
by tests of adequacy by product type. Products with similar investment
risk characteristics would have similar contingency margin requirements.

III. The minimum reserve requirements: (1) should be prospective in the
sense that current statutory valuation assumptions should be applied to each
piece of business no matter when written; and (2) should be adjusted grad-
ually and automatically from year to year, to reflect changes in the future

outlook for interest earnings, so reserves stay adequate but not excessive.

IV. The reserve basis should evaluate obligations according to investment risk characteristics of the product portfolio. (Tests are needed for each product category, to determine what maximum valuation interest rates are adequate and how they should vary to reflect changing economic conditions.) Specifically, reserves should take into account contractual guarantees concerning future considerations. (Such guarantees may range from less than a year to the whole of life.) Valuation assumptions should be divorced from assumptions used in determining nonforfeiture values.   Aggregate reserves should reflect reasonably conservative probabilities that contractholders will exercise options to take withdrawal or nonforfeiture benefits but may be less than the sum of the withdrawal and nonforfeiture benefits available under all contracts.

V. In determining the appropriate valuation interest rate, several facts should be considered.

A. The valuation assumption should be based on a current industry "reference" rate which would apply to short-term liabilities. But there should be more margin for conservatism with interest rates which are assumed to apply to the more distant future years, to recognize the greater uncertainty associated with yields on investments at that time. The current industry "reference" rate could be defined as a current earnings rate derived from reported insurance industry experience. This rate could be updated by using its historical relationship to a published investment market index (e.g., BAA bond yields) and subsequently be verified by relating it to the reported industry experience. As a general rule, the valuation interest rates should decrease with duration to recognize that a life insurance company's business characteristically generates a net cash inflow.

B. The ultimate "natural" interest rate applicable to long-term liabilities in the distant future should take no account of inflation and should be assumed to be about $3\frac{1}{2}\%$ to 4%. This produces more conservative reserves than do other interest patterns for most products and, in aggregate, for likely mixes of business.

C. Valuation interest assumptions should be chosen so that reserves will be adequate to meet, at a high confidence level, adverse long-term experience fluctuations.

VI. In considering ways to establish the above requirements, there are a number of alternatives. The principal ones are the following:

Alternative 1: In the past, the solvency test for life insurers has been based upon separate but consistent valuations of assets and of liabilities with solvency being defined in terms of the excess of assets over liabilities.

Alternative 2: Products sold by life insurers typically involve a series of cash inflows and outflows stretching many years into the future. The solvency test for life insurers could be based upon a matching of the future flows of funds with only the net differences discounted on the basis of a valuation interest rate defined in the statute. Such a valuation interest rate would be based on that interest rate which equates to zero the present value of all the net differences in the future cash flows. The remaining matched cash inflows and cash outflows could be valued using such a valuation

interest rate or any other interest rate applied consistently to matched cash inflows and cash outflows.

Alternative 3: Since the future flow of funds for some insurance products is difficult to project, life insurers could be given the option of using Alternative 2 for a particular group of assets and liabilities selected by the insurer. The remaining assets and liabilities with relatively unpredictable cash flows would be valued under the traditional approach of Alternative 1. (Alternative 3 would include safeguards to ensure that there is no imbalance as to future flow of funds in the remainder of assets and liabilities valued under Alternative 1. In addition, a means would have to be found to recognize future premium inadequacies.)

MR. E. J. MOORHEAD: I would appreciate the panel's enlightenment on the following questions: 1. What analytical process caused Mr. Minck to conclude that existing valuation and non-forfeiture laws have "worked very nicely"? Some might argue that they have preserved the existences of exceedingly inefficient life companies, and have caused some people to pay much more than necessary for their life insurance.

2. (For Mr. Greeley) Am I still the sole spokesman for the idea that even the currently proposed minimum cash values are too low at policy durations beyond, say, the 15th year? My contention, already filed with the Unruh-Gill Committee, is that as long as the industry continues telling buyers that a whole-life policy is a desirable savings plan, minimum values ought to be large enough to produce a reasonably satisfactory savings yield if kept in force beyond the early policy years. The Committee tended to reach its conclusions by dividing policyholders into two groups: those who keep their policies until death and those who use their cash values. I believe that the second of these groups should be subdivided into two groups: those who withdrew early, and those who persist for a lengthy period and then avail themselves of their cash values for, say, retirement purposes.

3. What has been the reaction to the March 1977 ACLI Board request that the interest rates be reduced by 1% for single premium policies? The request seemed to imply a desire to protect existing policies by inhibiting new products instead of by reducing prices on the existing policies. Secondly, a 1% interest rate change is too small to achieve its intended purpose.

MR. RICHARD V. MINCK: I feel existing laws have worked well because very little money has been lost by the public in life company insolvencies.

MR. GREELEY: It is difficult to determine what is appropriate beyond the 15th policy year. Expense allocation methods and other factors will have an important impact on asset shares.

MR. MINCK: With single-premium policies, inforce business will be replaced by new contracts if nonforfeiture and reserve laws for the new are out of line with laws applicable to old policies. If valuation laws for old business cannot be liberalized, then the laws applicable to new single premium policies must remain conservative.

MR. MONTGOMERY: I think there must be a willingness to let the new laws take effect and work for a while before revising them again.

MR. THOMAS G. KABELE: No one has mentioned the tax problem with current valuation laws. Higher interest rates are needed for life reserves because of the growing tax cost associated with a large spread between the 5-year average rate and the valuation rate.

MR. GREELEY: I would rather see the tax law changed than to use tax effects as a basis for setting reserve requirements.

MR. JOHN E. HEARST: Can Mr. Minck, explain his conclusion that a higher interest rate would not result in lower costs to the life insurance purchaser? It seems to me that a higher interest rate would reduce the amount of policy loans, surrender benefits, and federal income taxes, which would lower the cost of insurance.

Is there a reason why so little attention has been paid towards increasing valuation and nonforfeiture interest rates to a more realistic level? Rates are unrealistically low considering current portfolio interest rates. The result is unnecessarily high policy loans, surrender costs, and federal income taxes. Would not a more realistic interest rate, e.g., 5% or $5\frac{1}{2}$%, result in a more competitive policy, lower costs for the consumer, and larger operating gains for the company?

MR. GREELEY: At present, we have to get 50 states to act on problems. We are trying to speed up this process. Clearly, there are other problems that also need solutions.

MR. ROBERT G. SALINGER: In revising the Standard Valuation Law I would hope that some effort be expended on technical aspects of the Law. We are all familiar with the lack of clarity as to when the Commissioners Reserve Valuation Method (CRVM) should be used with continuous functions and with the interpretation given by the Society of Actuaries in its publication of Basic Values. There are also differences of opinion as to how multiple interest rates should be handled when using the CRVM. More precise definitions would lead to a better understanding of the intent of the Law and also to a uniform calculation method of reserves for all companies.

MR. JAMES F. REISKYTL: Why is there surplus strain on old business?

MR. MINCK: For annuity benefits purchased 10 or 15 years ago, investments have rolled over. New investments supporting these benefits are earning at a much higher rate. But, over the intervening period, the size of the liability has grown, so the amount of reserve overstatement is larger.