SESSION 8

MAKING AN ACTUARIAL OPINION

MR. ROBERT D. HOGUE: I am representing the Society of Actuaries Committee on Life Insurance Company Valuation Principles. The committee does not yet have a set of life insurance company valuation principles ready for exposure to the membership. But I will relate, based upon the work done to date, a set of five characteristics that a valuation should have.

1. A valuation should have a purpose and it should fulfill that purpose.

2. A valuation should address all material factors that affect the financial condition of a life insurance company.

3. A valuation should be performed using appropriate methodologies and techniques.

4. The actuarial opinion should be made by a qualified professional and should include full disclosure of all pertinent facts relating to the valuation.

5. The valuation process should include multiscenario testing in order to determine the valuation's sensitivity to changes in the assumptions used.

My assignment today is to react to the Symposium presentations under the assumption that valuation principles exist and to relate the techniques and methodologies used with such basic principles. For principles I will substitute these five characteristics.

If the Society adopts valuation principles (and some of the committee members doubt that it will), those will probably be used as reference points or guidelines. At this Symposium, we've been exposed to the researchers who are developing the tools, the techniques and the methodologies that we'll use. As we progress, we will also follow the direction in the Joint Committee Report on the Role of the Valuation Actuary, which includes a provision for the development of basic principles. The combination of these will eventually lead us to the development of standard practices. Shortly we should see the formation of an Actuarial Standards Board, which will add standards to the tools of the valuation actuary. As I have said, I view principles as reference points or guidelines necessary to a full process leading to a set of techniques, methodologies and standards.

So, let's assume that these five statements can be used as guidelines representative of a set of valuation principles that will be available some time later. I will react to what I've heard in the last day and a half in view of each of these five statements.

The first characteristic relates to a valuation's purpose. Will the methodologies and tools that have been presented here produce valuations that fulfill their purpose? In my opinion, they are probably going beyond that. As I see that purpose, its basic responsibility is a solvency calculation, determination and demonstration. Our audience is regulators who still see the need for a statutory

minimum reserve. But, what we've been presented with are tools that will give us more than that. The reason for this is probably the Joint Committee Report's inclusion of solidity tests involving designated surplus, and the concepts of "reasonable" and "plausible" deviations. Few of us yet know what these terms mean. For example, I would guess that any actuary in this room could easily put together a plausible scenario that would bankrupt his company in five years. Vitality surplus has been defined as the excess of total assets over those assets determined at the "plausible" level. The difference between these assets and those at the "reasonable" level is called designed surplus. Even though the first of these was excluded from the recommended valuation report as of my latest review, it was mentioned as being a part of a management report by one of the speakers. These terms and concepts will work their way into the purpose of a valuation.

One speaker mentioned that our audience is not only regulators, but also includes company management, policyholders, shareholders and perhaps the general public. Then, I heard someone say: "motivate management to take appropriate action." These statements refer to valuations beyond the statutory level and represent expansions of the role of the valuation actuary. Personally, I think they're extreme and the valuation actuary should not be responsible for these kinds of reports. Referring to the reserve number that we're going to calculate, one of the speakers mentioned "financial management is not financial reporting." The phrase "implied management action at certain points when certain numbers came up on certain reports" was also used. The implications inherent in these statements would move the valuation actuary out of the valuation business into the financial or surplus management business. Do we want to create that kind of role for the valuation actuary? Certainly actuaries do these things, and they

should be involved in these things, but do we want to legislate an associated responsibility?

The second characteristic stated that a valuation should be all inclusive and include all material factors. It should be a comprehensive valuation. From this viewpoint, all the presentations were excellent. They went far beyond the state of the art as I knew it. I have a better feeling, after this last day and a half, that the required tools will be available to an average working actuary like myself. But there are some gaps, due probably to the historical focus of the researchers. The emphasis on the C-3 risk, the SPDA and the GIC business exists because these have presented obvious problems. To become comprehensive, the techniques should be extended to address the C-2 risk, further examination of the C-1 risk (beyond what's already inherent in what's been done to examine the C-3 risk), and additional research on some of the asset and liability elements that were left out. It's easy to conclude that a continuation of the research generating these presentations will give us a comprehensive set of valuation methodologies and techniques that we can all use.

On the other hand, I saw a varying level of complexity. The approaches presented ranged between fairly simple mini-computer applications to very complex systems that would burden the large computer systems of the larger companies. One such latter application was described as not being sufficient or complete enough to enable the person doing the valuation to sign an actuarial opinion. So, as we look at the possible, within the state of the art, and at what people are doing today, we should measure the techniques and methodologies presented in terms of our comfort level when signing an opinion. With respect to the third characteristic, (the appropriateness of the methodologies and

techniques), I can offer little comment. I would guess that the methodologies and the availability of information upon which to base assumptions are evolving, but not yet adequate for an appropriate valuation. A comment was made that each company would probably develop its own model. If all of us have different models, then we will have different methodologies and results. Our current goal should be to satisfy the regulators. I am sure they would want a standardization of these projection techniques. But, a standard set of projection techniques haven't yet been developed or proposed. These presentations gave us an excellent first exposure to a number of potential development directions, but we have a lot of work to do before we can agree on a standardized set of appropriate methodologies and techniques.

A few general concepts were mentioned which will have major future impacts. The concept of portfolio segmentation was mentioned by one speaker. It was not listed as a requirement, but it is a major issue. Should we be required to segment our portfolios? I heard differences among the speakers on this point. Attention was also given to the concept of margins for adverse deviation. The overall view seems to be that we will substitute the use of explicit margins with the implicit margins associated with the use of "reasonable" and "plausible" experience assumptions. Again, I think there's confusion over what those terms mean.

Based on what I heard, it will be some time before we have appropriate methodologies and assumptions. It looks like we will first go through a long experimentation period. It also looks like we're going to have not one, but a number of proven and acceptable approaches. I didn't see, based upon this last day and a half, the probability of our locking in on any standardized approach.

Therefore, I can't really see us coming up with something called a standard valuation law for the valuation actuary. I believe we're going to develop a number of different approaches that are going to be accepted by ourselves and the regulators, and that it will take us as long as five years to do so.

The fourth characteristic dealt with the qualifications for the valuation actuary and the disclosures that he will put into an opinion. With evolving techniques and methodologies, without standard assumptions, without the real capability of doing something that will pass a regulator's audit, I would think that most actuaries will be reluctant to sign an opinion. I would also suggest that even after these things become useful, accepted and familiar to most of us that the opinion should demand disclosure of what we did, the assumptions we used, and how they fit the norms of commonly accepted methodologies and practices. In particular, the assumptions used should be identified and related to some kind of a safe harbor. To me, the presentations were first examples of a change from very familiar standard valuation methods and regulations to something very different. I feel that we need much more before we can sign an opinion without undue personal risk.

The fifth characteristic offered was that of sensitivity testing. One speaker mentioned that he had performed down-side scenario testing. That is, he had tested the catastrophic scenario. The results were expectedly poor, but the question of proper scenarios arose from the example. Since results are highly dependent upon scenarios, who should determine the scenarios? That seems to be a critical question that we will have to address.

Right now I would not feel personally qualified to perform a valuation according to the methodologies and techniques that were presented today. I think we have a research and educational cycle to go through before we'll feel comfortable, confident and qualified to fill the role of a valuation actuary. Beyond what we've seen yesterday and today, the Report of the Joint Committee included the concepts of ruin theory and confidence intervals. No speaker mentioned these, and it might be years before we include them in the valuation process.

I see a big difference between my personal knowledge of the state of the art a few days ago and now. But, the more I learned here, the more questions I wrote down, the further I took myself from the feeling of having the tools necessary to fill the valuation actuary's role.

But, I see no reason why the path we're taking will not lead us to a point where we'll eventually have these along with the standardized sets of assumptions we need to perform valuations that will fulfill the five basic characteristics mentioned, and I view the presentations made at this Symposium as major contributions.

MR. ALLAN D. AFFLECK: As chairman of the Academy Committee on Life Insurance Financial Reporting, I was asked to discuss how standards can help the practicing actuary in making an opinion. I will start by describing the current developmental stage of those standards. The Academy issued two discussion drafts in July of this year. Those covered both actuarial guidelines and standards of practice. To date 35 responses to the discussion drafts have been received. Some were lengthy, treating various aspects in depth. The majority dealt with substantial issues and are proving to be very helpful to the committee. The next

step will be to write a revised draft incorporating a number of suggested changes.

Several respondents pointed out that the original drafts did not include specific reference to the C-1 and C-2 risks. That was a deliberate decision. The committee did not want to delay obtaining feedback on the C-3 risk issues. Incorporation of standards related to C-1 and C-2 risks is on the agenda.

Another topic generating extensive discussion was the distinction between plausible and reasonable. In the traditional statutory valuation, conservatism is built in by adding a margin to each assumption (interest rate, mortality rate, expenses and so on). The original discussion drafts recommend scenario testing to build conservatism into the interest rates used for the opinion, but the continued use of margins for the other assumptions. This may be an inconsistency, and that is why the committee needs to do more work in the C-1 and C-2 area.

The committee members are not proactive in the sense of trying to have the Academy's Board adopt the revised Recommendation 7. We know that we need the support of the industry, and the industry needs a structure for the valuation actuary. Our goal is to continue work on the drafts, but not to take an approach that could be characterized as driving adoption of a new Recommendation 7. What we want to do is to be ready when the NAIC decides to adopt a new extended opinion. We are not going to be pushing the NAIC to do that, but we want to have suggestions in place when the regulators reach that stage

themselves. From my perspective, the earliest possible date that a revised opinion could be in place would be year-end 1987, and I personally do not think it will be that soon.

An NAIC Advisory Committee report will be discussed in December, but it may not be adopted (for 1985) at this meeting since there is wide feeling that more exposure is appropriate. However, it may well be adopted in 1986 to apply to the Academy's 1986 financial statements.

What are the key standards of practice in the Academy's discussion drafts? There are four major items. I will discuss two of them. First is a revised statement of actuarial opinion. It is important to recognize that only the NAIC can adopt an opinion, admittedly with our input. The opinion in that discussion draft was developed by the committee members as what we hope the NAIC would adopt if it is going to adopt anything. But that is the NAIC's decision, because the actuarial opinion is part of the statement blank.

The second area is investment data. The illustration in the discussion draft reflects our recommendation for what the NAIC should require. The factual data to be supplied on all the assets would be mandated, and it would be the chief investment officer's responsibility to supply it. The reason we recommended this approach is that we did not want actuaries, particularly in smaller companies, forced into developing a statement about investment strategy. We think it is better to separate that function from the actuary and put the responsibility on the company to supply that information. The actuary may also rely on the chief investment officer to provide cash flow information, if he wishes, but this is not recommended as a requirement. So, these first two

items are just our recommendations for how we hope the NAIC will proceed, if it decides to go forward. Recommendation 7 serves as a broad introduction to the standards of practice. Its interpretations give the detailed guidelines for the practicing actuary. Some have said that the interpretations in particular are too much of a cookbook, providing too much instruction to the actuary. Others have said that more direction for the actuary is necessary because this is an area where actuaries have not commonly practiced before. I think the committee's approach can be summarized in two sentences that appear in the introduction to the Interpretations:

> The Interpretations supporting the cash flow portion of Recommendation 7 provide more detailed guidance for the actuary than is usually the case. This is a deliberate effort on the part of the committee to provide guidance in an area where methodology is currently developing for the first time.

So we recognized that this is an area where we are providing more direction than is normally appropriate. We hope that in the future we will not have to include as much detail as is there now.

The key new item in the draft actuarial opinion is cash flow. The standards of practice identify specific items that should be addressed in testing cash flow. These include future yield curves, anticipated investment earnings (both scheduled income and variable earnings), repayments of principal (recognizing both call features and prepayments), the effects of any hedging, options and so on. If cash flow is negative in any projection year, a decision must be made about borrowing versus liquidating assets. There is a specific note pointing out

that realistic borrowing costs must be recognized, if borrowing is to be assumed. Finally, capital gains and losses must be recognized. Specific directions are given to the actuary for testing paths of future interest rates:

> Testing a single path is insufficient. Extrapolation of recent rates is not enough. The impact of an inverted yield curve should be tested. Test as many paths as the actuary deems necessary .

It is clear that one of the major concerns we all have is how to select scenarios. And a lot of concern has been expressed about having to make an opinion. But, in fact, actuaries in many companies already have been making these opinions in the state of New York, in order to use the higher valuation interest rates for their GIC and annuity business. I thought it would be helpful to show you actual interest-rate scenarios that five companies used in their New York filings. For anyone who is seeking practical guidance on how to make an opinion, I suggest you obtain copies not only of the opinions, but of the supporting work papers that are filed in New York. This is publicly available information.

The particular examples in the Exhibits 8-1 through 8-5 are of filings for year-end 1983. We need to keep that time period in mind. Company 1 described the approach used for its GIC business. Its current rate (at the time) was 13.5 percent and various level rates were tested, mostly above that 13.5 percent, but one was below it. Also tested were increases or decreases of half-a-percent per year going up to 16 percent and down to 11 percent and then going up to 18.5 percent and down to 8 percent. Finally, rates increasing half-a-percent per year to 17 percent, and then falling back 1 percent a year to 11 percent were tested. This allows the examination of impact of a wave pattern. Company 1's opinion

EXHIBIT 8-1

GIC BUSINESS

COMPANY 1

Current Rate:	13.5%				
Level Rates Of:	13.5%	15.0%	16.0%	17.0%	8.0%
Increase (Decrease) 0.5% Per Year To:	16.0%	(11%)			
	18.5%	(8%)			
Increase 0.5% Per Year To:	17%				
Then Decrease 1% Per Year To:	11%				

EXHIBIT 8-2

COMPANY 2

Current Rate:	12.5%
Increase 1% Per Year To:	16.5%
Increase 1% Per Year To:	16.5%
Then Decrease 1% Per Year To:	12.5%
Decrease 0.5% Per Year To:	10.0%
Decrease 0.5% Per Year To:	10.0%
Then Increase 0.5% Per Year To:	12.5%

EXHIBIT 8-3

COMPANY 3

Increase 1% Per Year for 2 Years

Then 0.5% Per Year for 8 Years

Decrease 0.5% Per Year for 10 Years

EXHIBIT 8-4

COMPANY 4

Current Rate: 13.0% Long, 9.25% Short

Increase Both Rates to 18% Over 2 Years

Decrease to 7% (Short) and 9% (Long) Over 2 Years

Spike Up to 14% (Short) and 15.25% (Long)

Spike Down to 9% (Short) and 10.25% (Long)

EXHIBIT 8-5

COMPANY 5

Current Rate: 12.5%

Increase by 1.5% Per Year to: 25%, 20%

Decrease by .8% Per Year to 4%

was based on a reasonable set of interest-rate scenarios, working from a 13.5 percent current yield rate.

Company 2 assumed a current rate of 12.5 percent and tested a scenario where the rate increased 1 percent a year to 16.5 percent and then remained level. A wave effect was also tested, up to 15.5 percent and back to 12.5 percent. Then a path of slow decline to 10 percent was tested, and finally a path declining half-a-point per year to 10 percent and going back up again was considered. You have to use your own judgment as to whether or not you think this is a wide enough range of scenarios, but the paths are what companies are actually using. Based on the results of these tests, actuaries are signing statements of opinion similar to that in the discussion draft.

Company 3 did not specifically mention its current rate, but it tested a path going up 1 percent in each of the first two years, then .5 percent in each of the next eight years, and another path of rates declining half-a-point per year for ten years.

Company 4's current rate structure was 13 percent long, 9.25 percent short. The first scenario increased both rates to 18 percent over two years, then decreased to 7 percent short, 9 percent long, over two years. Spike up and then spike down.

Finally, Company 5's current rate was 12.5 percent. It used the largest up swing I have seen, increasing by one-half percent per year to 25 percent in the first test, 20 percent in the second then decreasing by 8 percent per year to 4

percent. I understand the filings in New York become more sophisticated each year. Again, these were for 1983 filings, and I am sure a study of the 1984 filings would show more sophistication in the testing.

I think this is a good practical source of data for those of you who are concerned about looking at what another actuary has done. One concern I have is that if we do not move ahead, there is a danger that the states will move themselves. In effect, New York has done that in one area, and if other states follow suit, or if New York broadens what it already has in place, we will be doing this work on a basis that we will not be as happy with as if we had developed the guidelines ourselves.

From the committee members' point of view, there is a very fine line between giving the actuary too much instruction and not providing enough guidance. Again, this latter concern applies particularly to actuaries in smaller companies. We have tried to walk a middle line and move along at a pace where people are not falling off that line in one direction or another. The only other comment I would add is that while the formal comment period on the discussion drafts is past, it is clear these issues will be in a state of review for some time. If, after attending a symposium like this, you have new ideas or thoughts, I certainly invite you to send them along to the committee members. We are open to input, and anything you would like to add will be welcomed.

FROM THE FLOOR: It has been suggested here that the full requirements for the valuation actuary may not take effect until 1987. But the report of the NAIC Special Advisory Committee that is now being considered for adoption by

the NAIC may take effect for the 1986 valuation. The question is, are these inconsistent developments?

MR. HOGUE: Yes, the NAIC Advisory Committee report targets 1986, although actuaries are not yet ready to perform the requirements, especially actuaries in small companies. I think that's a problem, but the regulators are pushing very hard for this. My advice to everyone is to be prepared to do the calculations with the capabilities at hand, the tools evolving from the symposium and the research to date. It may not be that onerous because the report calls for these calculations only on interest-sensitive products in the individual line. I doubt that the initial requirements are going to be that extreme so that the tools presented here seem adequate to meet the minimum requirements at this point. Personally, I do expect another delay in adopting the requirements.

MR. AFFLECK: I will comment only that if an actuary is going to express an opinion without doing the kind of work we have talked about at this symposium, he is putting himself in a difficult position. He must have some way to back his opinion.

FROM THE FLOOR: If additional internally designed surplus is required to obtain the actuary's opinion, will this fact be disclosed as a part of the opinion? If not, will this lead to problems vis-a-vis shareholder disclosure?

MR. HOGUE: First of all, I think that it will be disclosed. From the Joint Committee Report, the NAIC requirements that will go into effect next year, and the Academy's exposure draft of the revision to Recommendation 7, I see a structure emerging that calls for a solvency test under reasonable assumptions

that will give a reserve number as an allocation of assets. On top of that will be a solidity test under plausible experience assumptions that will give another layer called a designated surplus layer. I think both of these will be disclosed in the valuation actuary's opinion. There's a third layer above that called vitality surplus, which will probably work its way into the management report. That layer is the amount of free surplus available to fund the company's growth.

FROM THE FLOOR: The Academy's principles and practices, as they are now written, do not give specific guidance on what an adequate reserve is.

MR. AFFLECK: My sense of what the Academy guidelines attempt to say is that a reserve is adequate if assets, in an amount equal to the reserve will allow the company to meet obligations under reasonable interest-rate scenarios and margins for adverse experience in other assumptions. One of the things it also says is that if a company is able to do that, but becomes statutorily insolvent in the short-term, the actuary must qualify his opinion.

If a company would become statutorily insolvent over the longer term, say beyond five to ten years, then the actuary must describe this in the management report. But that result would not need to be included in a qualified opinion. The rationale for this is that if a company becomes aware of the fact that it could become statutorily insolvent ten years down the road, then that is a long enough period of time for corrective action. It is not necessary to disclose the situation in the opinion. Management though, should be seeking ways to avoid the potential insolvency.

FROM THE FLOOR: Can an actuary who is a member of a life insurance company senior management team reasonably perform the role of a valuation actuary? If so, what potential conflicts does he face in his management or professional roles?

MR. HOGUE: The input I have heard on that doesn't generate a consensus. The comments vary. There are valuation actuaries, and Appointed Actuaries in other countries, who haven't run into any conflicts between these two roles. The other side of the argument is that even though that statement is true, their roles have been mainly those of allocating surplus between company retained surplus, shareholder dividends and policyholder dividends. In the U.S. those examples might not apply because of the evolving regulatory environment, the emerging problems of managing blocks of interest-sensitive products, and the kind of role that the valuation actuary will probably play in the allocation of assets to reserves, designated surplus and vitality surplus. This last element is probably where the conflicts with management will come into play because it might involve placing a limit on the execution of the plan and the growth of the company. Most of the discussion I've been involved in point to the fact that the valuation actuary should be the best in the company, should be the chief actuary, and should be a member of the senior management team. Such a person is the one most capable of performing the role for the whole company on an aggregate basis. But he will run into conflicts. The use of an outside consultant will get around the conflicts that an insider will have in his dual role, but the outsider won't know the company as well. The best response I've heard to this problem is a process wherein the insider will be free to develop the tools and the techniques

and evolve his role. At some point in time, after these three things achieve industry standardization, his reports would be audited by an outsider. The audit requirement should relieve him of these conflicts.