1987 VALUATION ACTUARY
SYMPOSIUM PROCEEDINGS

SESSION 5C

APPLICATION OF VALUATION CONCEPTS TO PROPERTY/CASUALTY INSURANCE

(OPEN FORUM)

MR. ROBERT A. MILLER, III: Before we begin, we want to make sure that all of you understand that neither the Casualty Actuary Society (CAS) nor its Committee on Valuation Principles and Techniques has taken a position one way or the other relative to the usefulness of the valuation actuary concept in the context of the property/casualty insurance business.

The whole purpose of our discussion is to develop a better understanding of how the concept might apply in the property/casualty context by exploring, with your help, some questions about the concept and its possible application to the property/casualty business -- and to have fun at the same time.

In Slide 1 we have our Valuation Actuary Tree. We will explore this tree briefly from the roots to the top.

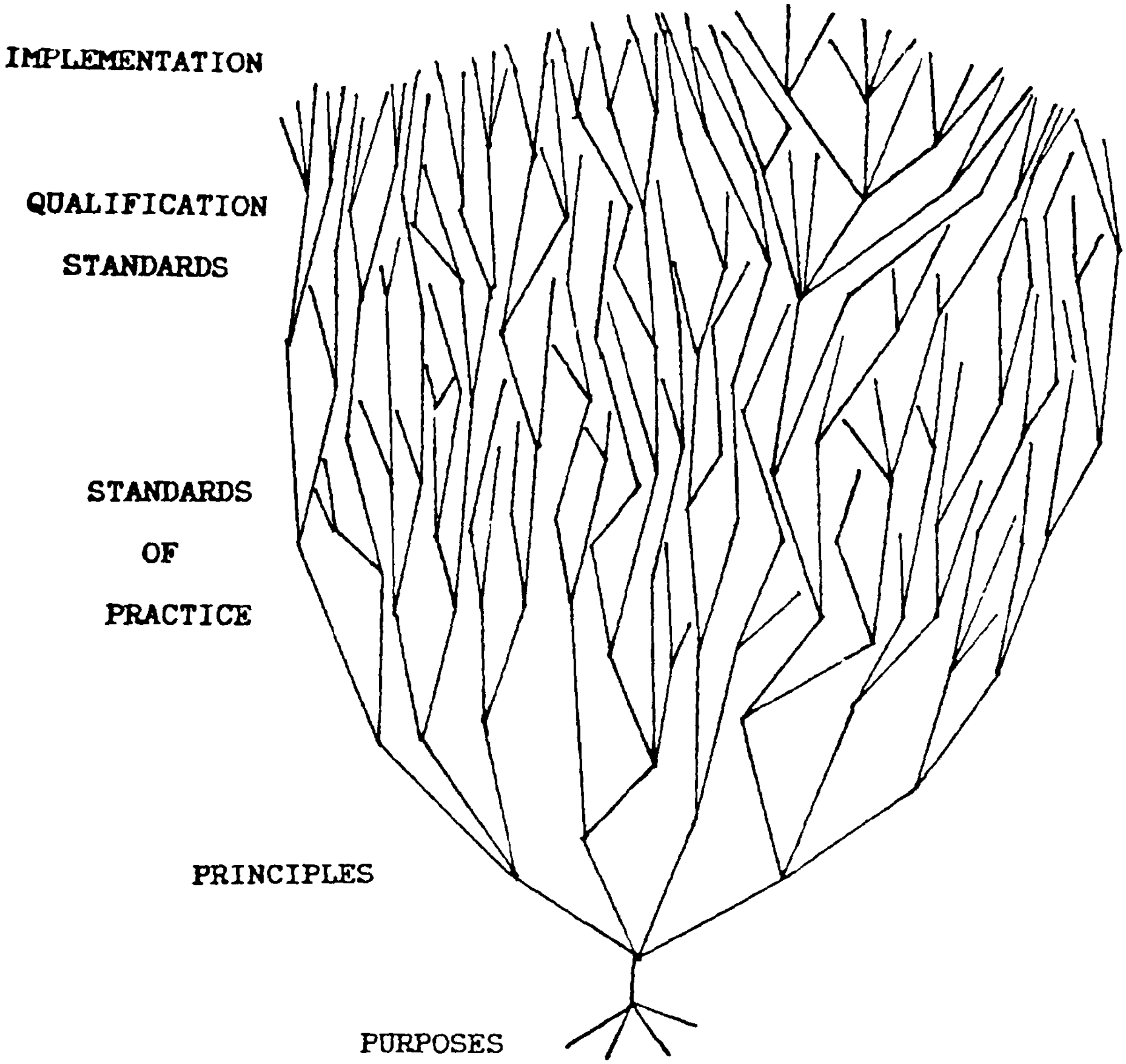
PURPOSE OF THE VALUATION ACTUARY CONCEPT

Our assumption is that there is a need for an efficient, effective and reliable property/casualty insurance mechanism. This is the seed and root system for our tree.

SLIDE 1

BLANK TREE

VALUATION OF P/C COMPANIES



The fundamental question we have to keep in mind throughout our discussion is whether the adoption of the valuation actuary concept will help the property/casualty business meet that need, particularly in the area of reliability. We hope the discussion will help you to organize and focus your thinking on that point, and we also hope your comments will give us some insights which we didn't have before. We by no means believe we know all there is to know about this subject, and we don't plan to give you any answers at the end of this session.

VALUATION PRINCIPLES

The trunk and lowest branches of the tree are symbolic of valuation principles. The CAS Committee on Valuation Principles and Techniques is at work in this area.

A principle is a fundamental proposition or assumption. Rather than try to define what fundamental means, I will list some of the characteristics of a principle.

1. It has nearly universal acceptance among competent members of a profession.

2. It is the best available guide as to the choice to be made among a set of alternatives.

3. It is constant over time.

4. It is valid regardless of specific conditions and independent of specific procedures.

STANDARDS OF PRACTICE

As we climb up into the tree we come to the standards of practice. The Casualty Operating Committee of the Interim Accounting Standards Board (IASB) will work in this area, but not until an acceptable statement of principles has been put together.

A standard of practice is a convention established by authority, custom or general consent. Some characteristics of a standard of practice are as follows.

1. It is consistent with underlying principles.

2. It is accepted by agreement by most competent members of a profession.

3. It is adopted to foster uniformity, convenience and comparability.

4. It tends to relate to specific conditions and procedures.

5. It can be altered by general agreement.

QUALIFICATION STANDARDS

As we go higher into the tree we come to qualification standards. From this point up, the CAS is at present simply watching developments relative to the valuation actuary concept in the context of the life and health insurance business. Qualification standards always relate to an individual actuary's education and experience, and are consistent with underlying principles and standards of practice.

IMPLEMENTATION

Finally, we come to the top of the tree. There we will consider a broad outline of the responsibilities of the valuation actuary's position and his relationships with others such as management, regulators, and members of the actuarial profession as a whole.

MR. CHARLES H. BERRY: In the time we have, we cannot explore the whole tree shown in Slide 2. We can't even make a quick pass at the whole tree. Nor can we explore even one branch in complete detail. What we will do is race up one single path from the roots to the top leaves to get a feel for where we may be headed.

In Slide 2 there is a single string of "Christmas lights" which we have added to the first tree to represent the nine questions which are drawn from the following areas.

1. The purpose of valuation
2. The scope of valuation--temporal
3. The scope of valuation--items considered
4. The margin required
5. Payout patterns
6. The discount rate
7. The format of the valuation report
8. The independence of the valuation actuary
9. The teeth of the requirement

To hold ourselves to a time schedule, we'll set an alarm for 8 minutes for each of the questions. When it rings, we'll have to stop our discussion immediately and move on.

Just in case you don't have enough questions and comments to use up this 8-minute quota, Mr. Miller has a list of complications he will toss in if we begin to feel like we may have figured out the "right" answer.

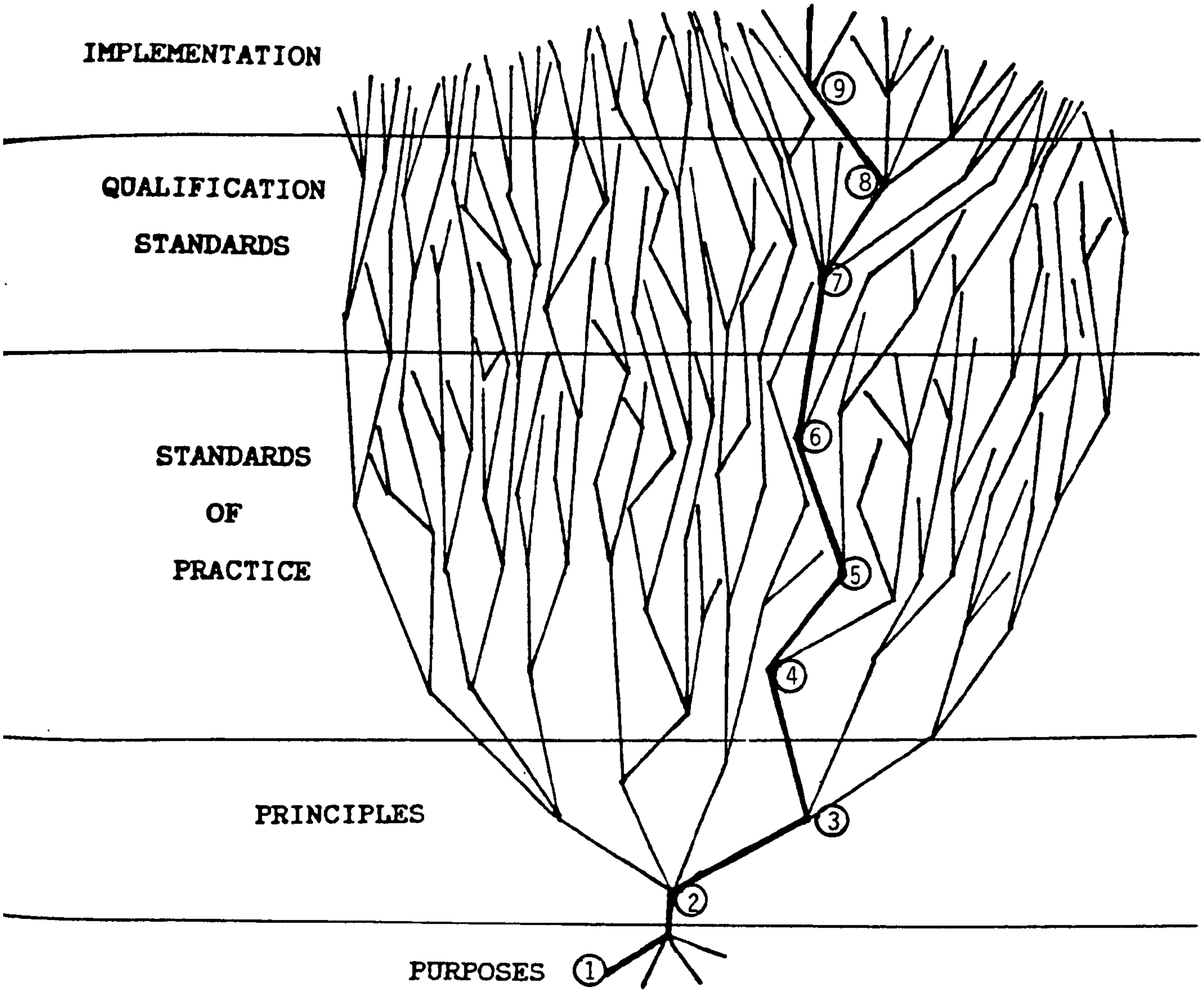
Please write down your answers so we can score them. Don't worry -- we'll grade them on a curve and 40% will pass. Try to resist the temptation to look ahead. We want to keep the discussion focused on one question at a time.

We really do want audience participation, and so let's check and make sure that your opinion-registering mechanisms are functioning this morning.

SLIDE 2

TREE WITH PATH

VALUATION OF P/C COMPANIES



1. How many have at least one arm working?

2. How many CAS Members are here? (Fellows or Associates)

3. How many SOA Members are here? (Fellows or Associates)

4. How many now have valuation-related responsibilities?

PURPOSE OF VALUATION

Question 1

Which of the following is the most important purpose of valuation for a stock property/casualty company? Pick the one best answer.

a. To help potential company owners estimate its net worth.

b. To protect existing owners.

c. To protect insureds against company insolvency.

d. To help regulators demonstrate that regulation is adequate.

e. To help management understand the risk position of the company.

MR. BERRY: You can't answer "none of the above." Just do the best you can. If you don't answer a, b, c, d, or e it will wreak havoc on our scoring procedures.

Question 1 Discussion Sparkers

MR. MILLER: It was hard to pick just one, wasn't it! Does anyone here believe one, or more, of these is not a legitimate purpose at all?

-- How many believe that the adoption of some form of formal valuation process of property/casualty companies is inevitable, even if no useful purpose for this formality is explicitly identified?

-- For those who answered "c" to this question: How would you define insolvency?

  a. Negative statutory surplus?

  b. Negative economic net worth?

  c. No longer able to pay claims?

  d. Some other definition?

-- For those who answered "e" to this question: Do we really need to do something to force management to understand a company's risk position?

-- For those who answered "a" or "b" to this question: If protection of owners is important, should the SEC also be involved in the valuation process?

SCOPE OF VALUATION--TEMPORAL

Question 2

Which aspects of a company should valuation consider? Check one or more.

a. Items recorded on the company's balance sheet as of the valuation date.

b. The quality of the company's current book of business.

c. The company's prospects for future growth and profitability.

d. "Dark clouds" on the horizon.

MR. BERRY: The spirit of Question 2 is: How far forward in time should we go? "Dark Clouds" refers to pollution liability, AIDS, and the like.

Question 2 Discussion Sparkers

MR. MILLER: For those who did not pick "c" or "d": It can be argued that future business is irrelevant to a valuation and should not be considered at all. However,

a. Suppose the company is OK now but appears to be headed for disaster. Should valuation ignore this?

b. Suppose company may be "technically insolvent" now, but can very likely survive and prosper (a la GEICO) if it is put on a proper course. Is anyone well served if the company is closed down?

-- For those who did pick "c" or "d": Is it practical to gather and analyze information about future business anyway, given the importance of underwriting cycles in the property/casualty business?

SCOPE OF VALUATION--ITEMS CONSIDERED

Question 3

Which items of the current balance sheet should the valuation consider? Check one or more.

a. Unearned premium reserves.

b. Loss reserves.

c. Loss adjustment expense reserves.

d. Reserves for other expenses.

e. Assets backing liabilities.

f. Surplus assets.

g. The relationship between the implied asset and liability cash flows.

<u>Question 3 Discussion Sparkers</u>

MR. MILLER: What accounting basis should be used in performing a valuation? Why?

a. Statutory?

b. GAAP?

c. Other? For example, should items not even on either balance sheet (such as investment commitments) be considered?

-- How many understand the concept of "duration"?

a. Is this concept important to valuation?

b. If it is important, given that the determination of "duration" involves the discounting of cash flows, does this necessarily imply that discounting of asset and liability cash flows should be adopted as a standard in Statutory or GAAP accounting?

c. If establishment of a formal valuation process led to the adoption of discounting of cash flows in either Statutory or GAAP accounting, would this be good or bad? Why?

-- Some believe that a formal valuation process should consider only liabilities and the corresponding assets and should not deal with the question of adequacy of surplus. What do you think?

-- Is it meaningful to do a valuation on a single free-standing company which is part of a larger group of companies, or is the highest level of consolidation the only place at which doing a valuation makes sense? What if there are non-insurance affiliates?

-- Evaluating the financial strength of reinsurers is a particularly complex practical problem. Do you think the establishment of a formal valuation process would be of any help to insurers in their selection of reinsurers? If so, what implication would such a requirement have relative to reinsurance with alien reinsurers?

-- If you didn't answer "e," "f," and "g": Do you think that characteristics of investments such as quality, time to maturity, call provisions, and taxability have any affect on an insurer's underwriting capacity, or even its viability?

a. If so, should characteristics of this kind be taken into account in valuation?

b. If so, how, and by whom?

-- Would it be practical for one single valuation actuary to consider directly all of the necessary items?

a. If not, how would a complete valuation be carried out?

b. If all of these items are to be considered in valuation, who is responsible for the "quality" of a valuation if more than one person must be involved in order to carry it out?

-- How should federal income taxes be handled in doing a valuation?

MARGIN REQUIRED

Question 4

Considering loss reserves and the assets backing them, which of the following best describes the amount of margin which is needed? Select only one answer.

a. No margin is needed, assuming surplus is sufficient.

b. Undiscounted statutory reserves implicitly provide enough margin for possible upward development.

c. Asset cash flows should have a 90% probability of extinguishing loss payments.

d. Asset cash flows should have a 99.9% probability of extinguishing loss payments.

MR. BERRY: Don't quibble over the percentages in "c" and "d"; just decide whether the margin should be extremely conservative or whether relying on surplus once in a while is all right.

Despite the rule that you have to pick one answer or another, how many of you made up your own answer "e?" We acknowledge that it really is more complicated than these questions suggest.

Question 4 Discussion Sparkers

MR. MILLER: Should there be a requirement for a margin of conservatism in reserves? If so:

a. How would the level of the margin be determined?

b. Would the requirement have any affect on the working or application of the federal income tax law?

c. How would outsiders measure an insurer's financial strength?

d. Would efficiency of use of capital be increased, decreased, or unchanged?

e. How would the basis for determining insolvency or the capacity to continue writing new business be affected?

-- Who should be responsible for determining how much exposure to risk a company can tolerate?

a. A valuation actuary?

b. Regulators?

c. Management?

-- Who has the authority to set the company's prices?

-- Is there any relationship between the setting of prices and reserves?

-- Do the answers to the second, third, and fourth questions have any bearing on the answer to the question as to who has the authority to determine the level of a company's reserves and surplus?

-- Do you think that it is possible to determine useful "confidence intervals" for the adequacy of a property/casualty insurer's reserves or surplus?

-- What do you think are the most common causes of insolvency of a property/casualty insurer?

  a. Random adverse fluctuations in experience the risk from which might be reasonably estimated by applying statistical techniques to historical data?

  b. Insurance catastrophes?

  c. Other types of catastrophes, such as extreme economic depression or runaway inflation?

  d. Still other causes?

-- It appears that for the property/casualty industry in aggregate, reserves held 5 to 10 years ago are about 15% less than the ultimate amount of dollars which will be paid out. Despite recent strengthening, reserves may still be "short" by 10% or more. On the other hand, a 10% "shortage" amounts to an implicit discount rate of only about 2% to 3%.

a. Do these statistics raise any useful implications about past or current reserving practices?

b. Of course, there must be reserves for some individual companies and lines of business which are "short" to a much greater degree than the average. What if anything, does this say about the need for the establishment of a formal valuation process?

-- There has been a suggestion that the required level of a life company's reserves should reflect the degree of risk management of the interest rate risk. Would it be appropriate to adopt such a position relative to property/casualty companies?

PAYOUT PATTERNS

Question 5

How should loss payment patterns needed for loss reserve valuations be determined? Choose only the one best answer.

a. The patterns already developed for each line of business for discounting under the new property/casualty tax law should be used.

b. All companies should use standard patterns to be developed by the CAS using industry data.

c. Each company would calculate patterns based on its own data from schedules O and P of its Annual Statement.

d. The valuation actuary would develop whatever patterns were appropriate and justifiable for the company.

Question 5 Discussion Sparkers

MR. MILLER: Life company valuations currently rely in large part upon Standard Mortality and Morbidity Tables which are fairly accurate and fairly stable over time. There are no comparable tables for the property/casualty business, and it seems likely that there never will be.

a. Even so, would it be helpful to have "benchmark standards" for payout patterns accompanied by a "range of reasonable variation"? Why?

b. What is the possibility that the payout patterns adopted in the new Federal Income Tax Law will become "benchmark standards" for the property/casualty industry?

-- Some companies have very different payout patterns for Owners Landlord & Tenants, Manufacturers & Contractors, Contractual, Products, and a variety of other liability coverages, all of which are grouped under "General Liability." There are other examples of this kind of diversity within other "lines of business."

-- Do these facts suggest a need for greater refinement in the valuation process for such lines of business? Why?

-- Payout patterns for a line of business may also change over time, for example, because of the introduction of claims-made policies. How can this best be allowed for?

DISCOUNT RATE

Question 6

What is the proper rate (ignoring any provision for conservatism) to use for discounting loss reserves for valuation purposes? Pick only the one best answer.

a. The interest rate specified by the new property/casualty tax law (a rolling 5-year average of 3 to 9 year Treasury Note market yield rates).

b. The company's current average portfolio yield rate.

c. Current new money rates, assuming assets are valued at market.

Question 6 Discussion Sparkers

MR. MILLER: If cash flows were to be discounted:

a. Should the discount rate be taxable or tax-exempt?

b. If taxable, should it be before of after tax?

c. Should the same rate be used for discounting assets and liabilities?

d. Should the answer depend upon the company's current tax position?

e. Should the answer depend upon the tax status of affiliated companies?

f. How should the interest rate yield curve affect the answer?

g. Should there be a whole family of interest rates reflecting the answers to the above questions? If so, is this practical?

-- The market value of investments presumably takes their investment characteristics into account. Should there be any adjustment to market value and, by implication, to the effective discount rate, to give additional reflection to risks related to characteristics such as:

a. Quality?

b. Diversification?

c. Marketability?

d. Call provisions?

e. Time since issue?

f. Time to maturity?

FORMAT OF VALUATION REPORT

Question 7

As a regulator, if you could require only one of the following, which would it be?

a. A statement signed by an AAA member whose opinion was that there was a 99% probability that the company's held reserves are adequate.

b. A statement signed by an AAA member that held reserves were based on reasonable assumptions and were calculated in accordance with proper actuarial theory.

c. A thick package, prepared by those who set the reserves, describing in detail 20 different scenarios, some of which would render the assets backing the reserves insufficient to extinguish these liabilities.

<u>Question 7 Discussion Sparkers</u>

MR. MILLER: What would be the purpose of the valuation report?

a. To evaluate whether a company's insurance obligations are adequately reflected in the level if its reserves and whether its assets adequately provide for paying off those obligations as they mature?

b. To evaluate adequacy of a company's surplus relative to the aggregate of the insurance and investment risks it has undertaken?

-- What should go into the report?

a. Identification of the actuary?
b. Description of the actuary's relationship to the company?
c. Scope of valuation?
d. Sources of facts?
e. Assumptions?
f. Methods?

g. Summary?

h. Opinion?

i. Signature?

-- To whom should the report be available?

a. Management?

b. Regulators?

c. Insureds?

d. Participants with the company in insurance guaranty funds?

-- Should the opinion contain a statement relative to "confidence intervals" for reserves and/or surplus?

-- Should a regulator be expected to rely on the statement of opinion and a signature, or should he/she have access to the report itself so he can make his/her own judgment about the methodology and assumptions?

-- If a regulator has access to the report, what is his/her responsibility relative to evaluating, and acting upon, its contents?

-- If the "thick report" is the best answer, should there be regulatory requirements as to what elements of risk should be considered and the specific methods (for example, a set of "scenarios") to be used?

-- Getting back to the purpose of the valuation, should regulatory requirements be designed to enforce the "education" of the management of companies so they can keep requirements which would accomplish this?

-- Do regulators have enough time to make effective use of "thick reports" for all of the companies operating within the scope of their jurisdiction?

INDEPENDENCE OF VALUATION ACTUARY

Question 8

MR. MILLER: If you were a regulator, assuming education and experience were the same in all cases, which valuation actuary's opinion would give you the most comfort?

a. The actuary who set the reserves?

b. An actuary of the company, but not the person who set the reserves?

c. An independent, outside actuary?

Question 8 Discussion Sparkers

MR. MILLER: What should be the qualifications of a valuation actuary?

-- Is the current supply of qualified persons adequate for the purpose of producing valuation reports and opinions for the entire property/casualty industry every year?

-- Is membership in a "recognized" actuarial organization important? Why?

-- Would it be acceptable to have several members of a company's staff, such as a reserve specialist, a claim manager, and an investment officer, collaborate in the development of a report and opinion?

-- Is it possible for a non-employee to learn enough about a company's operations to be able to develop a valid opinion about the adequacy of its reserves and surplus?

-- Is it realistic to assume that an outside actuary is really independent?

TEETH OF THE REQUIREMENT

Question 9

What is the proper punishment for the independent valuation actuary of a company which becomes insolvent due to a reserve shortage? Pick the one answer which most closely describes your feeling.

a. There would be no penalty, except in the case of wanton carelessness, conspiracy, and so on.

b. His error would be added to an official "batting average" for valuation actuaries which would be maintained and publicized.

c. He would be barred from giving valuation opinions for a period of 5 years.

d. His AAA membership would be revoked.

e. All his personal assets would be confiscated and used to help pay the claims of the company's policyholders.

<u>Question 9 Discussion Sparkers</u>

MR. MILLER: What problems might develop relative to a report and opinion, even if they were carefully prepared in strict conformity with current standards of practice?

-- What persons are damaged by an inappropriate valuation actuary's report?

-- What should be the purpose of a penalty for failure to comply with standards of practice in preparing a report and opinion?

a. To deter future inappropriate action?

b. To recompense "victims" of past inappropriate actions?

-- What incentives would encourage a valuation actuary to act in the following desirable ways?

a. Performing a thorough and conscientious analysis rather than doing the minimum necessary to "earn" a fee?

b. Refusing to give a favorable opinion for a company whose strength was questionable?

c. Working with a company's management to help them understand a potentially risky situation and to encourage them to remedy it in future years?

d. Renouncing his/her earlier opinion and informing the proper parties (management? regulators?) in the event new unfavorable information comes to light?

-- In the light of our discussion:

a. What incentives does a person have for wanting to be a valuation actuary?

b. Could additional incentives be developed, or existing incentives enhanced? How?

c. What are the disincentives to wanting to be a valuation actuary?

-- When does a valuation actuary's responsibility to those who rely on his/her opinion come to an end?

a. When a later favorable opinion relative to the same operations is provided by another valuation actuary?

b. Not until the company no longer has any of the assets or obligations which were embraced by the opinion?

c. When the valuation actuary officially renounces the original opinion?

d. Never?

e. Other possibilities?

-- Will a valuation actuary need to buy liability insurance? Will it be available?

-- Suppose standards of practice change over time. Will the valuation actuary be held to have been negligent in developing a report and opinion at some time in the past due to failure to use current "state of the art" practices which were not standard, or perhaps not even thought of, at the time of the report and opinion?

-- How should we measure the effectiveness of the adoption of the valuation actuary concept, say, in terms of preventing insolvencies? How do we quantify the tradeoff between this value and the cost of the process leading to the preparation of a report and opinion?

-- How is the responsibility of a valuation actuary similar to and different from that of an accounting firm giving an opinion relative to a company's financial reports?

We asked before whether the valuation actuary concept will inevitably happen for property/casualty companies within the next ten years. After this discussion, how many feel that, if it were to happen, it would produce more good than harm?

MR. MILLER: If the issue of valuation for property/casualty insurers seems more complicated now than it did when you walked into this session, we've accomplished our purpose.