



SOCIETY OF ACTUARIES

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## OPINION

# What is an actuary?

by Sam Gutterman

Over the first six months as president of the Society of Actuaries, a single question has come up more often than any other: "What is an actuary?" Although often asked by non-actuaries, it is significant that this question has also been asked by actuaries. It has arisen in the context of discussions about our basic education redesign proposal, efforts to expand the scope of the profession, actuarial skills that could be applied to non-traditional problems or jobs, the role of the actuary in public policy issues, and how to prepare the actuary to be in a position to be able to respond to Walt Rugland's "Ask an actuary" initiative.

Given the more than 150 years of our existence as a profession and more than 100 years in North America, the answer to "what is an actuary?" should be clearly defined and well understood. It doesn't seem to be. These are several definitions and common concepts raised over the years:

- A person who computes premium rates, dividend, risks, etc., according to probabilities based on statistical records (*The Random House Dictionary of the English Language*)
- The actuary substitutes facts for appearances and demonstrations for impressions (Ruskin — SOA motto)
- A future cost analyst. A financial futurist. Experts in evaluating the current and long-term financial implications of programs involving uncertain future events (Fred Kilbourne — 1983)
- A professional who assesses and manages strategic and financial implications of risk (input via Actuaries Online — 1995)
- The financial architect and potential manager of enterprises, both private and public, that are built on the intellectual core (the application of

experience analysis and risk evaluation to measure, communicate, and respond to the current financial implications of future contingent events) of the actuarial profession (*Actuary of the Future Task Force Report* — 1988)

- The core actuarial approach includes the application of probability, a long-term perspective, and the concept of the time value of money (Paul McCrossan — 1995)

I would like to add something I developed last year and identified as the current "Actuarial Paradigm," an elaboration of the above:

Actuaries identify and analyze the implications of future possibilities, especially with respect to risk. In conducting their analyses, actuaries develop one or more models to estimate the financial impact of future contingent events. The models may reflect the decision maker's objectives and risk tolerances and are applied to the particular situation, reflecting explicit assumptions based on:

- historical experience from similar types of exposures or related phenomena and
- in-depth knowledge of the environment in which the future experience will occur, which may differ from the environment from which data was obtained.

This knowledge enables actuaries to assess:

- the relevance, reliability, and credibility of available historical data, which is usually a sample of the underlying expected experience and
- the sensitivity of the models to changes in assumptions and model specifications, resulting in an assessment of a range of model results over single or multiple potential scenarios.

To enable the decision maker to effectively operate in an environment of risk and uncertainty, actuaries interpret the results of these models and develop possible alternative approaches to manage future outcomes. Because of the difficulty of predicting future contingent events and their consequences, these approaches are often dynamic; that is, they require a periodic evaluation of emerging experience and prospects for future change, to enable actuaries to appropriately modify their estimates or to more appropriately manage the risks undertaken.

I have heard several actuaries say, "I'm no longer working as an actuary." These actuaries may be senior managers of a firm; practice in investment, marketing or underwriting; or work for a non-traditional employer or a non-traditional practice area. Although their work may not match the above description, they most likely benefit from and apply the basic actuarial approach, knowledge, and skills gained during the route to their actuarial designations. Through their actuarial education, they have learned to objectively evaluate issues from different views in a rigorous manner, to reflect both a short-term and long-term perspective, and to identify, assess, and manage risk and uncertainty. Many "non-actuarial" positions can benefit from these skills, and I am confident that we can expand the fields in which actuaries can work. I believe that they can still call themselves actuaries and apply the fundamental approaches to problem solving taught by actuarial science.

I would be interested in further thoughts on this subject. Please contact me at my *Directory* address or at 73462.27@compuserve.com