

The Actuary

Value at risk

New tool focuses the hunt for built-in risk

by Harry H. Panjer
and Harry S. Panjer

Value at risk came into prominent use by banks and financial institutions in the 1988-96 period. That's when Bank for International Settlements (BIS), Basel, Switzerland, developed a system of capital requirements for the trading risks of banks and securities firms.

The document outlining the system, known as the Basel Accord, allows for a standardized approach to defining capital needs as percentages of holdings

of different assets, reflecting the inherent volatility of those assets. However, the accord's requirements did not recognize the hedging or diversification that might exist in a bank's portfolio.

As a result of opposition from globally diversified banking organizations, the Basel Commission on Banking Supervision allowed an alternative approach, which would require the

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VaR: The world is watching

by Selig Ehrlich
Assistant Editor, The Actuary

It's not often that a risk measurement methodology gets a mention in a publication like *Business Week*. But an article on value at risk (VaR), a set of such methodologies, rated two pages in the July 14 issue — a sign that the business community sees this tool as something dramatically new and different.

According to *Business Week*, European banks are now allowed to base their capital requirements on VaR calculations. In the United States, the Federal Reserve is considering accepting VaR measurements as well. Canada's banks generally use VaR for managing trading risks. The *Business Week* story noted that "VaR is expanding in two

dimensions: It's being used for risks other than market movements And it's being used by people other than traders, ... even CFOs at nonfinancial companies."

In fact, the concepts behind value at risk, another term for capital or risk exposure, go back a century or more and parallel analyses that actuaries have done for years. As such, VaR and other emerging risk measurement methodologies will be the topic of an SOA conference, "Integrated Approaches to Risk Measurement in the Financial Services Industry," Dec. 8-9 in Atlanta, Ga. (See story, page 5.)

The accompanying story takes a close look at VaR from an actuarial perspective.

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EDITORIAL

The right questions

by Robert D. Shapiro

The financial services industries most of us serve are fundamentally changing. So it's critical that our profession change, also, to meet the new needs of those and other industries using our services.

Conventional wisdom has become an oxymoron. Consider a simple but important example from the life insurance industry.

Career agents are becoming scarcer and more sophisticated. As a result, their role has changed from "captive agents" to "customer relationship owners," often resulting in a "captive home office." Conventional wisdom has led many home offices to seek alternate distribution systems (e.g., brokers, banks), often with some increased sales but with continued distancing of the insurer from the ultimate customer. Most future life insurance company winners will be found among companies that reinvent their marketplace models around long-term institutional relationships with targeted customers. Although "customer-driven" is a phrase found in most life insurers' strategic plans, it is often reflected only in surface activities around a continued "search for agents."

At the core of the transformation among insurers is the consumer. His or her level of knowledge has increased. Consumers don't want "products"; they want information, education, and advice from experts they trust. A consumer's basic loyalty is no longer to the brand.

Issues transformed
The defining issues for our industry have ceased to be capital, sales, and expense cuts. Although ratings, growth, and efficiency are still important, those old defining issues have emerged into three broader ones. Information, customer relationships,

and effectiveness (i.e., clear value added) will separate the winners from the losers from now on. The right questions to ask in the new environment are:

1. *Who are we working for?* How must we prioritize our various stakeholders?
2. *What do we want to be when we grow up?* "What are we trying to build" versus "how can we improve what we did last year?"
3. *How can we tell if we are getting there?* Is this year to be measured against last year — or against the desired next step in achieving our targeted results?
4. *What is "superior performance"?* What types and levels of success show that we are leaders?
5. *Are we doing the right things?*
6. *Are we doing them right?*
7. *How must we change?*

Today's incentive driver
For insurance companies, these questions are pushing management to place customers — not agents, management, or even shareholders — at the front of the line. More and more financial organizations are establishing customer satisfaction as a key performance measure, driving incentive compensation from satisfaction results. The ensuing domino effect often requires a reinvention of strategies, processes, systems, organization structures, and even the company's culture itself.

Too many companies — and unfortunately, too many actuaries — are turning a conventional eye to the new environment. It's unconventional wisdom, innovative ideas, and courageous thinking that will win in the years ahead, both for the companies we serve and for the actuarial profession.

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OP-ED

Growing with change

by William C. Cutlip

During this summer's editorial board meeting for *The Actuary*, one of the subjects discussed was how to give you, our members, the information you need to grow with change.

Change is all around us — our jobs, our actuarial education system, our employers, our customers, our opportunities, ourselves. (For an observation on some of these changes, see Bob Shapiro's editorial on page 2.)

At our planning session, your editors recommitted themselves to presenting articles in the coming months on critical, emerging issues. These will be designed to help you prepare for the change in actuarial

opportunities and for work that is here and that is coming.

You may see articles which, at first glance, don't seem to have a lot to do with your daily actuarial practice. However, I encourage you to take time to become aware of the issues and opportunities presented. For example, in this issue see the stories on value at risk, equity-indexed products, and using Internet search engines to help actuaries succeed as consultants. Consider not only how they are affecting the profession but also how they can affect you and your work.

We also want to make sure that we present you with information you want and need. Please write to us and let us



know what you would like to learn more about or to see in a clearer focus. We'll do our best to shed light on them in *The Actuary*.

William C. Cutlip, editor of *The Actuary*, can be reached through the SOA office or by e-mail at wcutlip@compuserve.com.

Bolnick is chosen SOA president-elect

Howard J. Bolnick was voted 1997-98 president-elect of the Society of Actuaries in balloting that ended August 12. Formerly president of Celtic Life Insurance Company, Chicago, he is now an adjunct professor of Northwestern University's (NU) Kellogg Graduate School of Management and a fellow of NU's Institute for Health Services Research and Policy Studies.

Also elected were three new Board vice presidents: William F. Bluhm, Robert L. Brown, and Esther H. Milnes.

New members elected to the Board were Gail A. Hall, Stuart Klugman, Ethan E. Kra, Craig R. Raymond, Donald J. Segal, and Jack M. Turnquist.

The Section election results will be announced in the October issue of *The Actuary*.

VIEWPOINTS

New feature

First "question of the month" asks your views of for-profit status

What happens to consumers when nonprofit health insurance payers convert to for-profit status? What's the impact on the insurance industry? Health care providers? Health care quality?

The editors of *The Actuary's* November issue invite you to submit your views for *The Actuary's* first "question of the month" feature,

"Viewpoints." The November issue will report on your answers as part of the issue's theme, "Hot Topics in Health Insurance."

Forward your answers to Jacqueline Bitowt, staff editor, *The Actuary*, at the SOA office (fax: 847/706-3599; e-mail: jbitowt@soa.org). Comments should be received by Oct. 1.

Value at risk (continued from page 1)

building of large computer models of the bank's portfolios. The models could recognize diversification and hedging and would be subject to standards set by the commission. The standards relate to the quality of the models used (including "stress testing") and the integration of the model into daily management procedures.

In 1995, the G-10 countries (the world's major economic powers) carried out a study on the size of their derivatives markets. It was estimated that — based on the underlying values — the total amount of outstanding currency derivatives was \$13 trillion, the amount of interest rate derivatives \$26 trillion. The daily traded volume of currency derivatives in April 1995 was estimated at \$15 billion, and of interest rate derivatives \$7 billion. This information was presented by BIS in its May 1996 report, "Central Bank Survey of Foreign Exchange and Derivatives Market Action." The size of the derivatives markets underline the importance of value at risk (VaR) models.

VaR modeling

Most VaR discussions relate to various aspects of building and implementing such models. The models typically incorporate statistical models of short-term interest rate, stock price, and exchange rate movements. Because of the size of asset portfolios, the relationship of derivative securities to the underlying assets, and swap and other arrangements (that have a zero value when initiated), the actual computer implementation is technically very complex. Key questions center on what kind of approximations can be used without causing a significant error.

In the simplest form of a statistical model, the changes in asset values are assumed to follow a multivariate normal distribution. Actuaries will immediately recognize deficiencies in this model when considered for possible application to insurance risks. Skewed returns are not reflected, since only mean variance and correlations are used. Also, correlation is not adequate to recognize

nonlinear relationships between assets — for example, between a stock and a put option on the same stock.

The ultimate object of the VaR exercise is to determine the distribution of aggregate losses and to determine the amount of capital required so that the probability of the capital disappearing is small (for example, 5% and 1%, corresponding to the 95th and 99th percentiles).

Actuaries will recognize that this is, in its most basic form, one of the fundamental questions of actuarial science for more than a century: How much capital is required to keep the insurance company solvent with high probability over some time period? For actuaries, the time period was typically one year, five years, or infinitely long. Differences

While theoretical similarities exist, how might VaR analyses differ from the types of analyses actuaries perform to deal with classic insurance solvency investigations?

One key assumption in actuarial insurance theory is that insurance risks are usually assumed to be independent of each other. This means a loss on one policy does not influence the probability or size of loss on other policies. The extent to which this assumption is violated is not significant in life insurance; for example, it's rare that one death is the cause of another. However, it may be significant in health insurance, where a common cause — inflation, for example — can affect the losses in all individual policies. The assumption of independence reduces correlations to zero, thus simplifying the problem for actuaries in insurance. In the VaR banking application, security and derivative prices may be highly correlated (sometimes positively and sometimes negatively).

Another difference is that distributions of insurance losses are usually highly skewed. Unless this is accounted for explicitly in VaR, simple properties of distributions, such as the multivariate normal, cannot be used. There has been a lot of evidence of heavy tails and of

heteroskedasticity (variation in volatility over time) in stock price returns. When this is taken into account, the VaR problem becomes much more challenging, particularly in view of the dependence between risks. That's why extensive literature has appeared recently on VaR modeling using such models as ARCH, GARCH, and EGARCH (autoregressive conditional heteroskedastic; generalized ARCH; exponentially generalized ARCH).

Another difference is the time horizon. For managing trading risk using VaR, a time horizon (or "holding period") of up to 10 days is typically used, while time horizons for insurance risks are usually measured in years. This extreme time difference alters the focus of risk measurement and management. Because trading positions can change dramatically within minutes, it is important for financial institutions to monitor portfolios for their immediate risk exposure. In contrast, insurance portfolios are not actively traded, and they change slowly as events (e.g., death, disability, hurricanes, and earthquakes) occur. Risk is modified through reinsurance and trading blocks of insurance business. Security and derivatives trading, however, needs daily portfolio monitoring because of the almost-instantaneous impact and reaction of markets and because traders might be tempted to take major exposures to gain profits. In insurance, risk exposure is typically reviewed annually.

Another key difference from classical VaR for the actuary in insurance is the interaction between valuation and capital needs. In the financial marketplace, security values are largely given based on trading information. The only concern is the fluctuation in these values. In insurance, the values of the relevant securities (i.e., insurance contracts or policies) are not given. The insurer performs a "valuation" to determine the value of the insurance liabilities. This value typically (explicitly or implicitly) contains safety margins that are subjectively determined to reflect the uncertainty in the

“assumptions,” an uncertainty often referred to as parameter risk. So uncertainty is separated into (at least) two parts: parameter risk and random fluctuation. One part is reflected in the “values,” the other in the capital. In VaR, the values are given. Concern is with the fluctuation in these values over a short time period. Since all forms of uncertainty are wrapped up in the value of the security, the key question relates to the movement of these values. The focus of research and development is on getting better models of such movement.

The future

Is there a future for VaR in dealing with longer horizons or other types of risk such as insurance risks? Clearly the answer is “yes,” since the fundamental underlying questions are the same. Extending VaR to the longer term is the subject of much research. This parallels the movement of actuarial risk

theory from the infinite horizon to finite horizons of, say, five years.

There is also the issue of approach. Actuaries have developed cash flow testing methods in which economic scenarios are analyzed to identify which would threaten the company. This is a kind of plausible “worst case analysis” without any formal probabilities attached to the scenarios. (These methods include dynamic solvency testing, capital adequacy testing, dynamic financial testing, and dynamic financial condition analysis.)

On the other hand, VaR immediately attempts to get the entire distribution of losses without identifying scenarios. The probability associated with any scenario can be obtained from the model.

Supplementing VaR with scenario analysis is a hot topic today among researchers. Actuaries also have been working on determining the exact distribution of losses over a fixed time

period and studying the distribution of losses and the “probability of ruin” using complex probabilistic models.

Security analysts around the world are closely following the developments in the field of risk management models. Analysts expect to find a positive correlation between the implementation of sound risk management concepts and the value of the share price of the firm implementing such procedures.

What is the future for VaR? More research is important. There are a wide range of interesting topics waiting for a closer look.

Harry H. Panjer, 1997-98 president of the Canadian Institute of Actuaries, is a professor in the Department of Statistics & Actuarial Science, University of Waterloo, Ontario. Coauthor Harry S. Panjer, cousin of Harry H. Panjer, is a board member of the European Federation of Financial Analysts Societies, Paris.

Integrated approaches to measuring risk is topic of December SOA conference

Recognizing the needs of today's financial services industry, the Society of Actuaries is sponsoring a conference to compare, contrast, and propose various approaches to risk measurement.

The one-and-a-half-day conference, “Integrated Approaches to Risk Measurement in the Financial Services Industry,” will be held Dec. 8-9, 1997, in Atlanta, Ga. The conference is especially timely in light of the U.S. Securities and Exchange Commission's recent issuing of market risk disclosure rules.

As consolidation in the industry continues, risk measurement and management practitioners will need to develop a common terminology and methodology while also recognizing the inherent differences between classes of risk. The SOA conference is designed to raise dialogue on important issues and encourage further research into integrated approaches.

Guest speakers represent both industry and the academic community. Speakers include:

- Philippe Artzner, professor of economics and management, Institute of Advanced Mathematics, Louis Pasteur University, Strasbourg, France
- Paul Embrechts, professor of mathematics, ETH (Swiss Federal Institute of Technology), Zurich

- Thomas S.Y. Ho, executive vice president, BARRA-GAT Inc., New York, and former professor of finance at New York University's Stern School of Business
- Thomas J. Linsmeier, assistant professor of accountancy, University of Illinois at Urbana-Champaign
- Liam Mason, vice president, Risk Management Research Group, J.P. Morgan Securities, Inc., New York
- William Panning, executive vice president, Advanced Risk Management Services Division, Willis Coroon, Nashville, Tenn.
- Peter Zangari, vice president, Risk Management Research Group, J.P. Morgan Securities, Inc., New York

Early registration fees are \$600 for members of any actuarial organization and \$650 for nonmembers. Members of the SOA Investment Section can attend for \$550 because the Section is cosponsoring the conference. All fees are \$50 higher for registrations postmarked after Nov. 17, 1997.

Details and a brochure are available from the SOA Continuing Education Department (phone: 847/706-3545; fax: 847/706-3599; e-mail: sberg@soa.org).

The brochure also can be downloaded from the SOA Web site (go to Continuing Education), and a special page will give updates about the conference (go to Research). The Web address is www.soa.org.

EIPs explained

As insurers continue to seek new products, actuaries will take an active role in developing them. Here, two actuaries discuss an innovative product group — equity-indexed products — that is selling well but has raised some questions among regulators. In addition to describing equity-indexed products, the authors talk about actuaries' involvement in efforts to address some of the issues. The authors welcome comments and questions from readers of The Actuary.

The cure for our savings problem?

by Richard D. Farrell

"Save for a rainy day." Although many have received this advice, it seems most individuals do poorly when it comes to saving money.

A recent study by Fidelity Investments revealed half of all working Americans ages 22-61 have less than \$10,000 saved toward retirement. An April 1997 survey by Scudder, Stevens & Clark, Inc., showed that among the 1,140 Baby Boomers surveyed, one-fifth had less than \$10,000 and two-thirds less than \$50,000 in their 401(k) plans. It seems that most Americans are not taking the steps needed to provide for a comfortable retirement. By saving too little and waiting too long to become serious about investing, many baby boomers will need investments with relatively high rates of return to achieve their retirement goals. Historically, such returns have come only from equity-based vehicles.

According to the Variable Annuity Research and Data Service, Atlanta, one-third of variable annuity assets were allocated to general account and money market accounts as of March 31, 1997. This is an indication that large numbers of individuals allocate a high proportion of their assets to low-yielding vehicles. Often, this stems from the fear of possible loss of principal, investment advisors say. Those using an overly conservative strategy risk inadequate rates of return.

There are also potential problems for current equity investors. Many have



little experience with equities and have not experienced a bear market (a drop in stock prices of 20% or more) because of the favorable run enjoyed by the stock market since the early 1980s. If such investors "run for cover" after a bear market, adopting an overly conservative attitude and strategy, they also risk too-low rates of return on their investments. Are EIPs the answer?

Equity-indexed products (EIPs) are well positioned to help address the savings problem. Although there are many variations in EIP design, the basic premise is for the cash surrender value to vary according to a formula which is driven by a predefined equity index (e.g., the S&P 500). Unlike variable products, EIPs provide minimum guarantees of the cash surrender value that typically meet or slightly exceed those required by nonforfeiture laws. EIPs are usually supported by general account assets and

Still evolving, hot product group gets actuaries' scrutiny

by Donna R. Claire

Equity-indexed products are hot in the marketplace today. More than \$1 billion in equity-indexed products (EIPs) were sold in 1996, and estimates for 1997 range from \$2 billion to \$10 billion, according to many investment bankers involved with EIPs.

As EIPs have taken off in the U.S. insurance market, so have regulatory concerns about appropriate disclosure and reserving. These concerns were expressed at NAIC meetings, with some states either shutting down the approval of the products (including revoking earlier approvals) or suggesting they might do so unless reasonable methods of regulating EIPs could be developed. Several initiatives by actuaries aim to resolve issues and concerns that have led to a "go slow" attitude among many regulators.

Actuaries taking active roles. At the request of the NAIC, the American Academy of Actuaries formed the Equity-Indexed Products Task Force in January 1997. The task force has issued three preliminary reports, the most recent in August. The group is charged with producing a final report, expected by the end of the year, that will:

- Address the many issues surrounding equity-indexed products

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- Provide information to the NAIC and state regulators on EIPs, both to familiarize them with equity-indexed products and to suggest sound actuarial methods for valuing and evaluating them
- Suggest a framework for market conduct and disclosure for these innovative products that would not mislead consumers
- Develop guidance for managing and reserving EIPs in such a way as to not endanger company solvency

To ensure the value of its work, the task force has established liaisons with other interested groups: the SOA; the technical resource advisory to the NAIC life disclosure work group; the National Association for Variable Annuities; the National Alliance of Life Companies; the ACLI; the National Conference of Insurance Legislators; and various Academy committees and task forces. The EIP task force reports to the Academy's Committee on Life Insurance, chaired by Craig Raymond.

A wide range of EIP topics has been featured in sessions at SOA meetings. At the 1997 annual meeting, EIPs will be discussed in the following sessions:

- "Equity-Indexed Insurance Products — Pricing, Investment, Accounting, and Reserving," 2:30 to 4 p.m. Tues., Oct. 28
- "Reinsurance of Equity-Indexed Annuities," 10:30 a.m. to noon Wed., Oct. 28
- "How Annuities are Really Sold," 2-3:30 p.m. Wed., Oct. 29

Also, the SOA is hosting a seminar, "Equity-Indexed Products," on Oct. 16 in Chicago. Information is available from Sue Berg at the Society (phone: 847/706-3545; fax: 847/706-3599; e-mail: sberg@soa.org), and the brochure can be downloaded from the SOA Web site (www.soa.org).

What will insurers do?

EIPs come in a number of different flavors — deferred-annuity designs as well as universal-life and immediate-annuity products. However, the basic design is a guarantee of 80% of principal plus a guaranteed-minimum interest rate, with the customer receiving additional interest based on a percentage of the increase in a particular stock index. The investments for this product typically are a combination of bonds and stock index hedges. Typically, the products are monitored on a daily or weekly basis.

What will insurance companies do with this new product and its evolving market?

One possibility is to ignore EIPs, at least for now. Not all shooting-star products become dominant in the marketplace. Equity-indexed certificates of deposit did not exactly take over the marketplace when they were introduced in the United States in the 1970s. (The stock market's downturn at that time did not help.) It was more than 15 years before variable products became a force to be reckoned with.

A wait-and-see attitude has other advantages as well. It's still somewhat unclear how these products will be regulated. Companies with in-force business are risking that they'll need to increase reserves and meet other requirements.

The downside of waiting is missing the market. If a company determines that it does not want to lose out on this market opportunity, there are some noteworthy avenues for information, advice, and alliances:

- Seminars on EIPs are available, such as those offered by the SOA. At seminars, individuals who have worked on issuing EIPs might be available to discuss potential pitfalls as well as what worked best.

- A draft of a practice note on EIPs is available from Steve Rentner at the Academy (fax: 202/872-1948).
- Several investment banks are supplying the hedges needed to back this product, and they can assist in determining the cost of various product options. They also can advise on ways to best handle the product; for example, it may be most cost-efficient for a smaller insurance company to only have issue dates of the second and fourth Tuesday of each month.
- Several reinsurers have expressed interest in this market. Consulting with a reinsurer is another way to learn about the cost of certain product designs. The reinsurers also will potentially share some of the risk involved in the product for a fee.
- There are a number of consultants who have some experience with EIPs. Tapping this resource might be useful.

Keeping up with EIP issues
Those interested in staying up-to-date on the Academy task force's activities can get on the Academy's "interested parties" list for equity-indexed products. Also, the task force still is open to new participants. Contact Steve Rentner on the Academy staff for information on the interested parties list or joining the task force.

Copies of the EIP task force's reports are available through Actuaries Online, from the Academy's library, and from Steve Rentner at the Academy.

Donna R. Claire is 1996-97 SOA vice president and treasurer and chairs the American Academy of Actuary's Equity-Indexed Products Task Force. She is president of Claire Thinking Inc., Fort Salonga, New York. She can be reached by e-mail at 73462.242@compuserve.com.

Hitting it big

Search engines can boost consultants' success

by Paul Polchert

Although total Internet-related trade was only \$15 billion in 1996, it is expected to grow to nearly \$200 billion, according to some estimates, by the turn of the century. But even with the Internet's skyrocketing popularity, actuaries often have trouble selling their services over the Web. Can the Web be a successful sales vehicle for actuarial services?

The answer is an emphatic yes — if it's used correctly.

The typical approach

Many actuaries who have Web sites have all marketed those sites the same way. Typically, after the site was developed, the owner listed it with as many search engines as possible, then sat back to wait for the business to roll in. But for many, it never materialized.

What happened?

Consider how people locate service providers on the Web. Someone needing a service would most likely use a search engine to perform a keyword search using terms that describe the service. Such a search often produces thousands of hits, which would take hours to wade through.

If your site is not among the top 10 or 20 listings in such a search, a large percentage of potential customers will probably never see your site. Thus, getting your site placed near the top of such a list is one of the more important criteria needed to succeed on the Web. After all, to sell on the Web, you must first get noticed by prospective buyers.

Getting to the top of the list To gain favorable positioning, study the particular requirements for each search engine with which you want to list your site. (Contacting the search engines, following their guidelines, and submitting your site's address hasten your site's addition to a search engine's listing.) Do a search, and analyze the first several sites listed to determine why they were placed at the top of the

list. Most search engines establish placement by a combination of factors including keywords, keyword density, titles, page content, number of

links, and meta tags (undisplayed text in Web documents that help search engines index and categorize sites).

In addition, there are several techniques that might help your Web page achieve better positioning. These include creatively repeating keywords, using invisible text, and developing "redirect" pages, to name a few. Be cautious, though. The techniques that produce a high ranking on one search engine can get you thrown off another, sometimes permanently. In addition, the results and rankings change almost continually.

Easier done than said

At first glance, going through this process might appear to involve a tremendous amount of work. But this isn't necessarily the case.

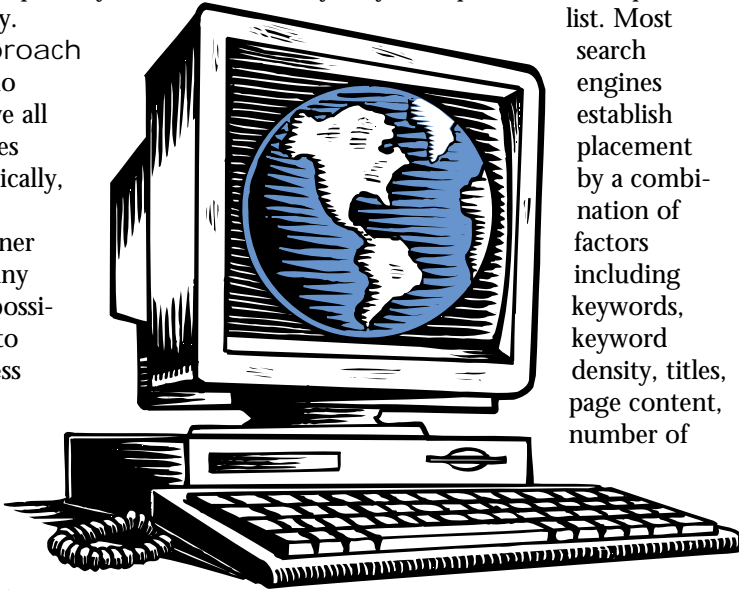
First, although there are dozens of search engines, you don't have to deal with all of them. The vast majority of potential clients use one or two of the eight most popular search engines or directories. Some experts say that up to 95% of all searches are performed using AltaVista, Infoseek, Webcrawler, Excite, Lycos, HotBot, Yahoo!, or Open Text.

And second, because of their technical expertise and training, actuaries may find it relatively easy to analyze how the favorably placed Web sites obtain their positions.

Does it work?

To illustrate how successful this can be, we asked a member of my virtual consulting firm, Total Actuarial & Benefits Services, Inc. (TABS), to assist us with a little experiment. (A virtual consulting firm is one in which members offer their services via the Internet and other online methods, rather than maintaining a traditional office.)

We first asked what keyword people would be likely to use in searching for this member's services. Determining the proper keywords is a crucial step in the process. He indicated that "life insurance actuary" would most often be used in a search by someone needing his services. I then developed a Web page using criteria specifically determined to place his page on or near the top in keyword searches on the AltaVista and Infoseek search engines. They are considered to be two of the most widely used search engines for this purpose.



The experiment was a success in terms of favorable placement. When searching for a "life insurance actuary," the member's Web site ranked first in 2.8 million hits using Infoseek and first in 1.5 million hits using AltaVista.

TABS has secured favorable placement of other pages on the major search engines using various keywords, sometimes occupying more than one key position. For example, when searching for a "pension actuary" on AltaVista, TABS sites rank first, second, third, fourth, sixth, and seventh. (Our pages are the ones that start with *www.virtualbenefits.com*.)

Of course, not everyone can be first in every category. This is why it's so important to register with all the major search engines and to compile an extensive list of keywords and phrases that prospective clients are likely to use when searching for the services you offer. Then, if you don't place well on one search engine for a particular keyword, you have a good chance of placing higher for a different keyword

or for the same keyword on a different search engine.

But does all this actually result in new business? Well, our experimental subject obtained his first major assignment through his AltaVista and Infoseek placements within two weeks after taking their number-one spots. Other ways to get noticed Getting to the top of search lists isn't the only way to get noticed on the Web. Another way is to cross link your Web site to other sites. For example, if you do life insurance company valuation work, you might get a casualty or pension actuary to provide a link to your site if you do the same for them. Or, better yet, cross link with non-actuarial firms that deal with companies who might need your firm's services. Some examples might be an accounting firm or a communications consultant.

There are also companies who will help you establish cross links free of charge. These firms make money by providing more extensive advertising to some companies for an additional fee.

One of the most popular of these is LinkExchange (*www.linkexchange.com*). Another way to publicize your site is to include your Web address on all company materials such as stationery, business cards, and newsletters.

You can get your name on the Web even if you don't have a Web site. One way is to register with several of the many online "yellow pages." Some are free and some charge a small fee. Libraries and book stores carry Web site directories, which provide information about online yellow pages. Or — you might go to a search engine and key in "yellow pages." **Paul Polchert is managing director of the virtual consulting firm Total Actuarial & Benefits Services, Inc. (TABS), Schaumburg, Ill. His articles and speeches on Web marketing have been presented by the American Academy of Actuaries and the American Society of Pension Actuaries. His e-mail address is polchert@earthlink.net.**

The cure for our savings problem (continued from page 6)

are not considered to be subject to rules governing securities.

Most EIPs provide at least a return of principal along with guaranteed interest credits so long as the contract is not prematurely surrendered — and even if there is a "total meltdown" of the stock market. Furthermore, excess interest might also be payable in such a disaster scenario depending on the product design and the stock market's path. These features increase the likelihood that EIP owners will "hang in there" during a bear market.

As with any retirement savings product, EIPs can help address the savings problem by diverting money away from current consumption. With interest credits based on performance of an equity index, these products also have the potential to deliver the higher

rates of return which will be needed. Meanwhile, EIPs may be acceptable to many conservative individuals because of the guaranteed principal feature.

Many EIPs can only be surrendered without penalty during brief window periods that open only once every 5-10 years. This relative lack of liquidity can be viewed as consumer friendly because it provides an incentive to stand firm when the market hits a scary bump in the road.

If an EIP owner takes no action while the window is open, the EIP mechanics simply kick in again until the next window. This feature also can benefit the consumer. If the process to "re-enroll" was more cumbersome, hesitant or indecisive consumers might return their savings to conservative vehicles.

Actuaries have made many valuable

contributions to the evolution of EIPs including product development and addressing issues related to pricing, reserving, and investing to make EIPs profitable for both their issuers and consumers. In Dave Holland's presidential address at last year's SOA annual meeting, he stated, "Actuaries provide service to the public by developing and valuing financial programs." EIPs represent one such program. Members of our profession should continue to seek innovative approaches to finance — especially when such approaches have the potential to address social problems.

Richard D. Farrell is vice president of NFC Consulting Group, Chicago. His e-mail address is dfk00a@prodigy.com.

Readers respond

“What is an actuary?” The long, the short, the humorous

by David M. Holland
1996-97 SOA President

In the March issue of *The Actuary*, I asked what definitions you use when asked, “Just what is an actuary?” Judging by the number and speed of responses, this must have touched a sympathetic chord.

My question stemmed from two reports in the news media. One decided to call us accountants rather than try to explain what an actuary is. The other expressed overwhelming boredom with a definition the writer heard. So I asked for definitions of sound-bite length as well as more formal ones, and readers of *The Actuary* rose eagerly to the task.

Tom Reese, Harish Pawagi, and Daisy Ilagan said actuaries are “insurance mathematicians.” This is concise and communicates well. In fact, the German word for actuary (*Versicherungsmathematiker*) can be literally translated as “insurance mathematician.” Some may argue that this definition meets a sufficient condition, but not a necessary one. In other words, actuaries are involved in a lot of areas beyond pure insurance.

“An actuary is a professional trained in financial modeling and management, often working in insurance, pensions, or investments.”

Link Richardson suggested that an actuary is a “financial engineer,” and Brian Stricker said, “We are the engineers of financial security.” The concept of the actuary as an engineer

makes sense. An engineer is a responsible professional who practices in the applied sciences. The term “financial”

精算師

“Accurate calculating master”

is broad enough to cover insurance as well as benefit plans, health coverages, annuities, investments, and other areas in which we work.

Eric Klieber defined an actuary as “a professional expert in determining the current value of future contingent cash flows and applying this knowledge in insurance, finance, and other business areas.” Kenneth Faig said an actuary is “a mathematically trained professional who designs or evaluates products and services involving uncertain future events.”

Duncan Ferguson, president of the Institute of Actuaries, also has been concerned over how to describe the actuarial profession. For its 150th anniversary next year, the Institute has selected as its theme, “Actuaries Make Financial Sense of the Future” (see story, page 11).

The concept of risk appeared in many definitions. David Kerr of Australia sees an actuary as a “financial risk manager.” Wes Carver said, “An actuary is a professional trained to identify, evaluate, and respond to financial risks.” Denis Loring defined an actuary as “a business executive specially trained in the mathematics of risk.” Adrian MacKaay said an actuary

is “a financial risk specialist,” and Kip Headley said “someone who analyzes risk.” David Godofsky’s definition was “a mathematician who studies financial risk.” Willis B. Howard said an actuary is “someone who understands risks and their financial implications ... (and can also explain how risks should be considered in financial decisions.” Al Klein said, “An actuary studies complex financial and business-related risks and recommends appropriate solutions to management.” Bob Gabriel said, “An actuary is a professional trained in mathematics who evaluates insurance and other business risks.” Tom Hochstedler sees the actuary as “someone who assesses a company’s risks and liabilities in order to help management make profit-making decisions.”

Some people saw the actuary as a soothsayer who can use mathematical tools to look into the future. George Hogeman defined an actuary as “one who quantifies the future,” and Steven Altschuld said an actuary is “a professional estimator of future finances, populations, hazards, and events.” Elliott Weinstein considers an actuary to be “a professional who uses technical and business skills to predict insurance and other financial risk.”

To me, the most poetic definition is the Chinese word for actuary. This word consists of three characters, which interpreted individually say “accurate calculating master.” When I’m thinking about this topic pragmatically rather than poetically, I lean toward the short definitions for “actuary” such as “insurance mathematician” or “financial engineer.” (The latter label is part of a title for an SOA annual meeting session, “Financial Engineers: Who Are These Guys?”) Speaking with non-

actuaries, I might use, “An actuary is a professional trained in financial modeling and management, often working in insurance, pensions, or investments.”

With respect to humorous definitions, my own submission (although not necessarily original) would be “the Wizard of Odds.” Grady Catterall said an actuary is “someone who figures the cost of something that hasn’t happened yet.” Alice Underwood, Courtney White, and Chris Rose all identified actuaries as bookies. Alan Pennington identified actuaries as people who didn’t get enough exams in college. Dan Arnold’s wife said an actuary is

An actuary is a “Wizard of Odds.”

“a knight in shining armor who jousts with risk.” Bruce Jones identified actuaries as “the brains behind the insurance products.” Keith Passwater said an actuary is “a risk engineer, architect, wizard, magician, financing expert, and master of contingent events.” Rich Wright coined the word “ecountant” to signify the actuary as a combination of economist and accountant. David Lipkin said “an actuary is the professional who

should be around when money and probability collide.”

Finally, Jeffrey Smith said, “An actuary’s job is to make sure that an insurance company has enough money today, so that it will be able to pay off in the future all of the benefits it has been busy promising everyone in the past.”

My thanks to all who submitted responses.

David Holland can be reached by e-mail at *David_M_Holland@compuserve.com*.

Perspectives from abroad

“Just what is an actuary?” (*The Actuary*, March 1997) brought a response from Duncan Ferguson, president of the Institute of Actuaries. Following is a definition being highlighted for the Institute’s 150th anniversary in 1998. It is based on the year’s theme, “Actuaries Make Financial Sense of the Future.”

“Actuaries are experts in assessing the financial impact of tomorrow’s uncertain events. They enable financial decisions to be made with more confidence by:

- Analyzing the past
- Modeling the future
- Assessing the risks involved
- Communicating what the results mean in financial terms

Enabling better decisions

“Actuaries add value by enabling businesses and individuals to make better-informed decisions, with a clearer view of the likely range of financial outcomes from different future events.

“The actuary’s skills in finance and in risk management are used

extensively in the areas of insurance, pensions, and investment. Within these industries, actuaries manage and lead in the design and pricing of products. Actuaries also advise on the overall management of insurance companies and pension schemes.

“Actuarial skills are valuable for any business managing long-term financial projects both in the public and private sectors.

“Actuaries apply professional rigor combined with a commercial approach to the decision-making process.”

Role and responsibility

“Actuaries balance their role in business management with responsibility for safeguarding the financial interests of the public. The duty of actuaries to consider the public interest is illustrated by their legal responsibilities for protecting the benefits promised by insurance companies and pension schemes. The profession’s code of conduct demands the highest standards of personal integrity from its members.”

Definition from Down Under Holland reports that the Institute of Actuaries of Australia has an extensive discussion of “What is an actuary?” on its Web site. The discussion includes a description of an actuarial career, reprinted here in part:

“Actuaries apply mathematical, statistical, economic, and financial analyses, which involve adding risk assessment to longer-term financial contracts, in a wide range of practical business problems.

“In addition, as career executives, many actuaries participate in the operational management of financial institutions.

“Insurance, superannuation, stock-broking, investment, banking, and government are the more readily recognized areas in which actuarial services are utilized.”

The Web page also lists nine specific major functions actuaries perform. For details, see the posting at www.actuaries.asn.au.

THE COMPLETE ACTUARY

Coming soon: a guide for your future

by Michael M. Braunstein

“What do you want to be when you grow up?” Your mother or father probably asked you that when you were about five or six years old. Do you remember your answer? I do. I wanted to be a garbage collector. As I watched the trucks come by each week, I longed for the day when I could toss a full can’s contents into that spinning thing at the back of the truck. Since then, my answer has changed, and my guess is that yours has, too.

As adults, how many of us ask ourselves a similar question, “What do I want to be doing five years from now?” My hunch is not many, but I suggest you ask that question now. No matter how much you enjoy your job today, you can count on it changing. If you want to remain happy throughout your working life and, subsequently, your retirement, your career is well worth careful thought and planning.

Unique guide for actuaries That’s where the Society of Actuaries can help. The SOA Continuing Education Department and the Committee on Management and Personal Development are pleased to present *The Actuary’s Career Planner*, a four-part guide designed to assist actuaries in:

1. Defining their personal vision (“The Starting Line”)

2. Assessing their competencies (“Me, Myself and I”)
3. Determining their preferences (“Does This Suit Fit?”)
4. Developing their career plan (“The Road to Success”)

The Actuary’s Career Planner soon will be available from the SOA. The notebook-style planner presents a step-by-step approach to get you from where you are to where you want to be. After you create a preliminary personal vision statement (soul searching required), the guide will help you assess your technical and business/management competencies and indicate areas where you might need improvement.

This section, focusing on the core competencies needed for success as an actuary, makes the *Career Planner* unique. Career guides found on book store and library shelves do not address actuarial skills as specifically.

Then, based on your individual career profile, you can complete a set of exercises to match your skills with your vision. Are your technical strengths in the pricing area or in financial reporting? Do they involve contracts and compliance, or are they heavily weighted toward investments, computer systems, or another area?

More importantly, how do those strengths stack up to those required by the career you envision?

Similarly, on the business/management skills side, how strong are your communication capabilities, your interpersonal skills, and your leadership abilities? Are they sufficient to help you progress upward, or do they require further development? You will have to ask yourself, “Do I have the skills needed to do what I want to do?”

The third section of *The Actuary’s Career Planner* addresses personal preferences and suitability. Again, through the use of exercises, the guide seeks to match your values with workplace culture. Are you competitive? Do you seek harmony? Do you like structure? Do you thrive on creativity? Are you entrepreneurial? Knowing who you are and what you like, and finding the job that matches, are imperative if you want to wake up smiling on those 2,000 Monday mornings of your working lifetime.

With your preliminary vision in place, a list of improvement areas prepared, and personal preferences understood, it’s time for your drive down the road to success. The development of your personal plan is the fourth part of *The Actuary’s Career Planner*. With additional exercises to help combine all facets of your career, you can create a long-term travel plan, set 36-month, 12-month, and 6-month goals, and map out the route to get you there.

Characters, sessions to help walk you through it *The Actuary’s Career Planner* has an interesting cast of characters to help you along: Merry Actuary, Steve Strategist, Bill Backbone, David Developer, and others. It can provide very practical assistance for all actuaries from students to seasoned veterans.



Most of all, it will help those who are ready to take control of their lives and plan for their futures.

The SOA will offer a teaching session and follow-up workshop on *The Actuary's Career Planner* at the 1997 annual meeting. They are scheduled for Tues., Oct. 28. Of course, the planner also will be available for those who won't be able attend. Watch for an announcement of availability, or call the SOA Books Department (847/706-3526). Though there will be a nominal fee for the guide (to cover production costs), no actuarial career should be without one.

As for the garbage collecting, there's always tomorrow.

Michael M. Braunstein is president and owner of An Actuarial Recruiter, West Hartford, Conn., and is vice chairman of the SOA Committee on Management and Personal Development. His e-mail address is aar@home.net.

Career Planner grew from donor's vision

A bequest to the Society of Actuaries helped make *The Actuary's Career Planner* a reality.

In a time when few women became actuaries, Mary Cusic Wilson of Rock Island, Ill., found success in actuarial science. Her fondness for the profession led her to bequest \$25,000 to the SOA for the education of actuaries.

When Mrs. Wilson died in 1993, a process began that led to development of *The Actuary's Career Planner* by the SOA Committee on Management and Personal Development. The final draft will be presented at the SOA's annual meeting (see story, page 12).

Mrs. Wilson served as an actuary for Lincoln National Life Insurance Co., Fort Wayne, Ind.,

from 1931 to 1947 and then for Royal Neighbors of America, Rock Island, a fraternal benefits society for women, until 1967. She was both an FSA and a member of the American Academy of Actuaries. She was a member of the Academy's first board of directors, serving a 1965-69 term, and of the Academy's Professional Conduct Committee.

Mrs. Wilson is making an impact on actuarial science through her bequest to the Society. Today, the SOA Foundation, launched in 1993, is the organization of choice for donors who wish to provide a legacy for actuaries of the future. Information is available from Kay Branz at the Foundation (phone: 847/706-3557; fax: 847/706-3599; e-mail: kbranz@soa.org).

Faculty of Actuaries elects SOA members to Fellowships

W. Paul McCrossan and Walter S. Rugland were recently elected Fellows of the Faculty of Actuaries, Scotland's national actuarial organization.

Only seven individuals have been elected Fellows. The designation recognizes distinguished achievements in mathematical, statistical, or financial subjects or important service in promoting the Faculty's objectives.

McCrossan was a founder of the International Forum of Actuarial Associations (IFAA) and was 1991-92 president of the Canadian Institute of Actuaries. He is a partner of Eckler Partners Ltd., Don Mills, Ontario.

Rugland currently chairs the IFAA, and he was active in the founding and the early activity of the International Actuarial Association. He was 1992-93 SOA president, and he has served as vice president of the American Academy of Actuaries. He is a consulting actuary in life insurance for Milliman & Robertson, Inc., in Hartford, Conn.

Both McCrossan and Rugland were elected Honorary Overseas Members of the Institute of Actuaries in 1996.

The Faculty of Actuaries elected six of its seven Fellows this year in honor of the 150th anniversary of the actuarial profession in the United Kingdom next year.

Public service award goes to N.Y. actuary

For his work to restore sound actuarial principles to New York's public pension plans, actuary James B. Gardiner recently received the profession's highest award for public service.

Gardiner, supervising actuary of the New York State Insurance Department, was named the 1997 winner of the Robert J. Myers Public

Service Award by the American Academy of Actuaries at its Annual Washington Luncheon.

Gardiner supervises the actuarial review of the eight pension systems regulated by the New York State Insurance Department. When New York City faced bankruptcy in the mid-1970s, Gardiner served on the

blue-ribbon task force that worked to make the city's pension plans solvent.

Today, Gardiner is one of few actuaries serving in a full-time capacity at the age of 90. He began his actuarial career in 1929 at Metropolitan Life, attaining the rank of associate actuary in charge of the group pension area before joining the New York state staff.

SOA team works to strengthen ties in Asia

by David M. Holland, 1996-97 SOA President,
and Yuan Chang, SOA Vice President

By mid-year, three important events had occurred as part of the Society of Actuaries' effort in Asia, where the SOA now has more than 600 members.

First, the Board of Governors voted at its January meeting to increase the SOA's outreach to members in Asia by establishing the Asia Committee. At the same meeting, the Board also approved a three-year extension of the SOA's support for the actuarial program at Nankai University, Tianjin, China.

and in the process enhance the SOA's profile in that part of the world.

The trip included presentations by SOA President Dave Holland to meetings of the Institute of Actuaries of the Republic of China in Taiwan and the Actuarial Society in Hong Kong. (Of the SOA's 600 members in Asia, two-thirds are in Hong Kong and Taiwan.)

SOA was there at the start. During the SOA/Nankai agreement's first 10 years, the SOA has sponsored about 30 North American actuaries to

that actuaries are immensely qualified to provide. If actuaries don't step in, the vacuum will be filled by others.

It took hard work for Professor Kailin Tuan to introduce Nankai to the Society of Actuaries in 1987, and it required foresight for the Board of Governors, led by Harold Ingraham, Jr., to accept that proposal and its inherent challenges.

Celebration, ceremony offered vital messages. The actuarial delegation to five Asian cities was led by SOA President Holland, who was joined by Yuan Chang, SOA vice president of international practices, and for part of the trip by Past President Ingraham.

The visit began at Nankai, where a ceremony marked the 10th anniversary of the SOA/Nankai agreement and the signing of the three-year renewal.

The one-day celebration drew Chinese government officials, representatives of national educational institutions, senior managers of insurance companies operating in China, and, of course, actuaries from near and far, including the program's 10 1997 graduates.

The morning began with the agreement renewal signing, in which Holland and Nankai's president, Zixin Hou, were the principals. President Hou expressed appreciation for the SOA's contribution and for the continuing help symbolized by the new agreement. President Holland returned the courtesy and then delivered a speech, "Summon the Heroes," with the message, "True heroes of today are often unsung and unpraised ... [and] ... true heroes are those who ... use their abilities to make a difference in the lives of others."

Three past presidents of the SOA in attendance — Allan Affleck, Ingraham, and Dick Robertson — added cogent and serious comments of their own.



The banner announces the event: "Nankai University and Society of Actuaries Joint Agreement Renewal Signing Ceremony." Shown after the ceremony are (from left) Xiufang Li, Maoshan Liu, Maizeng Zhang, Allen Affleck, Zixin Hou, David Holland, Yuan Chang, Harold G. Ingraham, Jr., Richard Robertson, Kailin Tuan, and Shengzhong Jiang.

Lastly, an SOA presidential visit to five Asian cities began in late June, just prior to the Hong Kong hand-over. The trip — starting in Tianjin and continuing in Beijing, Shanghai, Taipei, and Hong Kong — was timed to coincide with a celebration in Tianjin of the 10th anniversary of the SOA/Nankai agreement. In general, the trip's purpose was to build new or better relationships with local educational institutions, actuarial organizations, and SOA members

teach a month-long course at Nankai and has underwritten certain expenses for books, examination material, and other incidentals.

The significance of the SOA/Nankai agreement cannot be exaggerated. A decade ago, it represented the beginning of formal actuarial education in China, a country with enormous potential in the very early stages of developing its insurance and financial markets. In those markets, a need exists for the types of services

Yuan Chang later concluded the ceremony with his remarks. He urged friends of actuarial education in China to consider subsidy programs for teachers, a model of which his company has installed in Nankai. He then reminded the graduating students that a professional's job is to solve problems for others, and he encouraged them to consider others' perspectives when they begin to practice.

The remainder of the day was devoted to a series of papers on actuarial education in various countries. The papers were presented by the heads of actuarial organizations in North America, Japan, Singapore, Taiwan, and Hong Kong. Professor Maoshan Liu, the head of Nankai's Department of Risk Management and Insurance, gave a well-balanced account of the problems in actuarial education in China and asked everyone to join him in seeking government approval

to grant departmental status to actuarial science in all universities.

Building a foundation for the profession in China Ten years have gone by. The SOA has demonstrated its leadership role in establishing the actuarial profession in China and strengthening the profession in Asia. Not only does Nankai have an entrenched program of actuarial education, thanks to the SOA, but many actuarial science programs have been introduced in other Chinese universities as well. Indeed, the SOA delegation addressed the first graduating class in actuarial science at Renmin University, Beijing, and met with university leaders there. In Shanghai, outstanding actuarial science programs have been introduced at Fudan University and the Shanghai University of Finance and Economics. (During the SOA delegation's visit, Fudan University hosted a Chinese-American

insurance seminar. Holland and Chang attended the seminar, where they met with government, insurance industry, and university leaders as well as SOA members and students.)

The development of the profession in China is well on its way, but its maturity is a long way off. In another 10 years, we can expect actuaries in China to have their own organization, give their own examinations, attain senior ranks at their jobs, and win the respect of others in society. **David M. Holland is president and CEO, Munich American Reassurance Co., Atlanta, Ga. Yuan Chang is chairman and CEO, MetLife Greater China Operations, Hong Kong. They can be reached by e-mail at, respectively, David_M_Holland@compuserve.com and 105043.430@compuserve.com.**

SOA wins communications honors

Several projects of the Society of Actuaries and the SOA Foundation recently received awards from two communications organizations.

The SOA was honored with four Awards of Excellence in the APEX '97 contest sponsored by Communications Concepts. Awards were presented to:

- *The Actuary*, January 1997, Robert Shapiro, editor for that issue, in the newsletter category
- David M. Holland, SOA president, for his 1996 presidential speech, "Back to the Future," presented at the SOA annual meeting, in the speech and scriptwriting category
- The Society of Actuaries Web site in the Web and intranet sites category
- The Society of Actuaries Foundation for its consumer education program "On the edge of change: Putting Social Security back in balance" in the training, education, and information campaigns category

The APEX awards recognize overall communications excellence, including editorial content and graphic design.



The Actuary also received a 1997 Silver Award for its March 1997 issue in the annual competition sponsored by The Newsletter Clearinghouse. Sue A. Collins was editor of the issue. The award recognizes superior editorial content enhanced by appropriate design and typography, photographic quality, and printing quality.



The National Federation of Press Women (NFPW) granted three awards to the Society and the Foundation:

- A first place award to the Foundation's "On the edge of change" program in the nonprofit public service campaign category
- Second place for the "On the edge of change" partnership package in the direct mail marketing category
- Honorable mention to the SOA's "Actuarial Circles" program

NFPW is an organization for professional journalists and communicators.

Independent panels of communications professors and other experts were assembled to judge all competitions.

E&E conversion rules completed, focus turns to content

by Linda Heacox
SOA Public Relations Specialist

The eagerly awaited conversion rules for the new education and examination system have been published. These rules govern the application of credits earned by candidates under the old system.

Now the design team has turned its attention to refining topics and defining learning objectives. Design Team Chair Jeffrey Beckley said his group is now "in the beginning of the implementation phase, working on each of the eight courses in detail."

Beckley said work on Courses 1 and 2, which will be jointly administered with the Casualty Actuarial Society (CAS), is basically finished. By mid-1998, the goal for each course is:

- Learning objectives will be completed.
- Material will be identified for use and, where there is none available, new material will be commissioned.
- Evaluation methods (e.g., exams or graded projects) will be determined.
- A sample exam will be completed.
- A final report will be presented.

Guidelines for the ninth and last element of the system, the professional development requirement, will be developed by a group of 10-12 people soon to be appointed. Beckley said, "There is discussion about whether that group should be part of the design team or outside people who will be specifically assigned to this task."

Rules well received
So far, the conversion rules have enjoyed a positive reception. Candidates and members have expressed both praise and relief over the rules, according to both Beckley and Marta Holmberg, Ph.D., education executive of the SOA. Holmberg said that candidates were naturally anxious to find out how their credits would be transferred from one system to another. But it seems most people find the conversion rules fair and even generous.

Of course, there are still questions about the nuances of the rules. Holmberg addressed some of the more frequently asked questions.

Credits will be assigned automatically, she said. "Candidates do not have to submit a request to have them

converted." In 1999, candidates will be sent written notice of how many credits they would receive in the new system for the courses they have already passed.

Some candidates have asked how Course 2 credit will be attained. Candidates who have passed SOA 140 or 141 and also have another 20 unassigned credits will receive credit for Course 2. Candidates who passed CAS Part 4A during or before the May 1997 exams (and have the 20 additional credits) can also receive credit for Course 2, though they need to request credit for 4A from the SOA.

Candidates also have wondered when they become eligible for Associateship in the new system. The ASA designation will be awarded after successful completion of Courses 1-6.

To find all the SOA conversion rules, visit the SOA Web site at www.soa.org. They're in the Education and Examination section.

Linda Heacox can be reached by e-mail at lheacox@soa.org.

Faculty job open at Canadian university

Position: The University of Western Ontario is inviting applications for a tenure track position in statistics or actuarial science at the assistant professor level to begin July 1, 1998. The opening is in the Department of Statistical and Actuarial Sciences.

Qualifications: Applicants must be Canadian citizens and permanent residents of Canada. Requirements

include a doctorate and demonstrated excellence in teaching and research. Preference will be given to candidates with research interests in any of the following areas: actuarial science; experimental design and industrial statistics; financial modeling; statistical computing; and statistical medical imaging.

Application: Applications will be accepted until Dec. 15, 1997, or until the position is filled. A curriculum vitae and the names of three references should be directed to: Professor M.S. Haq, Acting Chair, Department of Statistical and Actuarial Sciences, University of Western Ontario, London, ON, Canada, N6A 5B7.

A look inside Robert Reich to highlight '97 annual meeting

An address by a leading political economist with inside knowledge of the U.S. capital heads a list of impressive speakers in 150 educational sessions at the 1997 SOA annual meeting. The event will be held Oct. 26-29 at the Washington, D.C., Hilton and Towers.

Robert B. Reich, 1993-97 U.S. Secretary of Labor in the Clinton administration, will give the keynote address at the first general session, 8:30 a.m. Mon., Oct. 27. A faculty member at both Harvard and Brandeis Universities, Reich has earned a reputation as one of the world's most creative thinkers about economics and the future of work. He is an advisor to political and corporate leaders around the world. His most recent book, *Locked in the Cabinet*, presents an insider's view of the Clinton administration's first four years. An engaging speaker and prolific writer, Reich's 1991 best-seller, *The Work of Nations*, has been published in 14 languages.

Three days of continuing education opportunities at this year's annual meeting include such timely topics as: mortality in the 21st century, managed

care, employment trends, career planning and marketing yourself, rapid application development (RAD) for new products, the old-age crisis, genetic testing, using the Internet, data mining, fair-value reporting, physician-owned health plans, valuing foreign business, and modeling.

Special field trips that require preregistration and have limited enrollment include:

- 1:30 to 4:30 p.m., Mon., Oct. 27: Tour of the Pension Benefit Guaranty Corporation offices with key personnel
- 1:30 to 4:30 p.m. Tues., Oct. 28: Tour of the Federal Reserve System's offices as part of an investment policies program presented by the Fed. Sponsored and subsidized by the Investment Section, the event is limited to 50 people. Cost is \$5 per person.
- 1:30 to 4:30 p.m. Tues., Oct. 28: Tour of FBI headquarters and a presentation by the chief of the FBI's Health Care Fraud Unit. Sponsored by the Nontraditional Marketing Section, attendance is limited to 90, at \$10 each. For



Robert B. Reich

security reasons, participants must supply Social Security numbers on the registration card.

For more information, contact Sue Berg at the Society office (phone: 847/706-3545; fax: 847/706-3599; e-mail: sberg@soa.org). The annual meeting brochure is posted on the SOA Web site (www.soa.org) under Continuing Education.

Sponsors sought for SOA/CAS career fair

Companies that want name recognition with 200 potential future actuaries and their schools can get in on the ground floor at the first Actuarial Careers Information Fair organized by the SOA Committee on Career Encouragement and the SOA/CAS Joint Committee on minority recruiting.

The fair will be held from 12:30 to 4 p.m. Mon., Oct. 27, during the Society of Actuaries' annual meeting in Washington, DC. It is designed to attract the area's "best and the brightest" high school and college students, career advisors, and math, finance, and economic educators who have little or no knowledge of the profession.

See the "Sponsorship Interest Form" enclosed in this mailing of *The Actuary* for more information, or contact Cecilia Green or Linda Heacox at the Society office (phones: 847/706-3500; fax: 847/706-3599; e-mail addresses: cgreen@soa.org and lheacox@soa.org).

October Board meeting open to all members

The October SOA Board of Governors meeting will be held during the annual meeting in Washington, D.C., from noon to 5 p.m. Wed., Oct. 29, at the Washington Hilton and Towers. The meeting is open to all Society members.

For more information or to request a copy of the minutes, call Kathy Keller at the Society office (phone: 847/706-3511; fax: 847/706-3599; e-mail: kkeller@soa.org).

CORNER

Knowledge extension activity
Statistical Methods — Count Data: Researchers Dennis Tolley and Gilbert Fellingham produced the following papers, which are under review by professional journals, as a result of this research:

- “Likelihood Methods for Combining Tables of Data”
- “Mining the Data Warehouse: Statistical Analysis of Combined Tables of Categorical Data”
- “Combining Life Table Data”

Random Mortality Rates and the Analysis of Selective Lapsation: The NAAJ has accepted the final paper of researcher Bruce Jones.

An Actuarial Index of the Right-Tail Risk: Researcher Shaun Wang’s paper has been accepted by the NAAJ for publication. The abstract and introduction will be posted on the SOA Web site.

Credibility Using a Loss Function from Spline Theory: Practical Considerations: Virginia Young’s paper has been accepted by the NAAJ.

Insurance Pricing: Theory and Applications: Shaun Wang has published two papers relating to his research, one in the *ASTIN Bulletin* and the other in *Insurance: Mathematics and Economics*.

Is Social Security a Regressive System? Researcher Rob Brown’s paper has been accepted by the NAAJ.

Bounding and Asymptotic Behavior of Ruin Probabilities in Collective Risk Theory: Dr. Vladimir Kalashnikov presented his research results at the Actuarial Research Conference.

Finance area update

100-Year Term Structure of Interest Rates: Because of the low response

rate to this call for papers (CFP), the review panel has decided to repeat the call using a new strategy to broaden awareness and interest in it.

Integrated Approaches to Risk Measurement in the Financial Services Industry CFP: Invited and accepted papers will be presented at a Dec. 8-9 conference in Atlanta (see story, page 5). Additional information is available from Sue Berg at the SOA (phone: 847/706-3545; fax: 847/706-3599; e-mail: sberg@soa.org).

Study of the Use of Derivative Instruments by the Insurance Industry: This project began with a proposal from Georgia State University. The research resulted in two papers; the first appeared in the inaugural issue of the *NAAJ*. The second paper is titled, “The Use of Financial Derivatives in Corporate Risk Management: Participation and Volume Decisions in the Insurance Industry.” It will appear in the *Journal of Risk and Insurance*, and it will be available through the SOA Books Department.

1986-94 Commercial Mortgage Study: Insufficient data has been received from contributors to proceed with this study. The committee is investigating the feasibility of conducting a similar study using publicly available data.

Health benefit systems activity
Credibility for Health Coverages: This project’s purpose is to develop concrete guidelines for establishing full and partial credibility for experience under each type of health coverage. The POG is pursuing five potential initiatives: a seminar on credibility for practicing health actuaries; two applications of formulas from actuarial literature to contributed data; and two data collection efforts.

Catastrophic Claims Health Database: A panel discussed the *Large Claims Study* at the SOA

spring meeting in Palm Desert and urged attendees to contribute data to the follow-up study. The panelists were Kyle Grazier (researcher), Tony Houghton (POG chair), and Tom Edwalds (SOA research actuary).

Health Care Databases: Mark Epstein, executive director of the National Association of Health Data Organizations, presented the National Health Information Resource Center Web site at a session at the SOA spring meeting in Palm Desert.

Definition of Managed Care Effectiveness: The working group for the Managed Care Effectiveness project met in the spring to discuss the perspectives of various stakeholders on the cost, quality, and accessibility of managed care. These ideas were presented along with a finalized grid outline at two sessions at the SOA spring meeting in Palm Desert. Several attendees at these sessions volunteered to participate in the working group or advisory panel for this project. Howard Bolnick and researcher Jill Schield are drafting a document based on the grid outline and incorporating ideas contributed at these meetings.

HEDIS 3.0 Study: The request for proposal (RFP) for the HEDIS® 3.0 Study was released in July; responses were received by August 1, and the proposal to be funded should be selected by mid-September.

Individual Disability 1986-91: A draft report is available from the SOA Books Department for a \$10 copy fee. Life insurance news

Committee on Life Insurance Research (COLIFER): COLIFER is conducting an open meeting at 10:30 a.m. Wednesday, October 29, at the SOA annual meeting. The status of key research projects will be reviewed, and suggestions for new projects will be discussed. Persons with an interest in life insurance research are invited to attend.

Annuity Persistency Study: This is a follow-up to the single premium deferred annuity persistency study published in the 1991-92 *TSA Reports*. The study, conducted jointly with the Life Insurance Marketing and Research Association (LIMRA), covers both fixed and variable annuities persistency experience from 1992 through 1994. Twenty-eight companies provided data. LIMRA member companies can obtain the report through LIMRA. Copies of the report are available to SOA members who are not affiliated with LIMRA member companies through the SOA Books Department for \$10. The SOA will also publish the study in an upcoming issue of *TSA Reports*.

Actuarial Modeling: In Phase 1, the researchers analyzed the impact of economic factors on the performance of life insurers as a whole. In Phase 2, the researchers constructed a database of annual statement fields using NAIC tapes for the past 12 years, with about 1,700 companies per year. Using this database, they will now examine the impact of both firm-specific and economic factors on the performance of individual life insurance companies. Robert Hoyt has agreed to present preliminary results at the 1997 SOA annual meeting.

Mortality and Lapse Rates: The purpose of this project is to investigate the relationship between lapse rates and subsequent mortality results, quantifying the degree to which higher lapse rates lead to higher mortality. Based on comments from COLIFER, the researchers have revised their original paper. It is under review by a professional journal.

Generally Recognized Expense Table (GRET) for Life Insurance Sales Illustrations (1998 Update): In early June, a draft report was submitted to the NAIC Life Disclosure Working

Group for comments in the development of a final report. The report is expected to be finalized in September.

Preferred Underwriting Task Force: As of July 1, 61 companies had responded to the 1997 survey and data compilation had begun.

Individual Life 1990-91 and 1991-92: Final data is being collected for both studies; reports are expected by the end of 1997.

Retirement systems update

Impact of Mortality Improvement on Social Security: United States, Canada and Mexico: The purpose of this project is to perform a rigorous study of the impact of mortality improvement on the social security systems of the United States, Canada, and Mexico. The project has been divided into three phases. Mountain View Research, Inc., has submitted its final report for Phase 1, the study of past experience and analysis of current literature. Plans are being finalized for Phase 2, a conference of experts on Oct. 30; the topic will be the formulation of mortality improvement assumptions. Phase 3 is analysis of the impact of mortality improvement on social security. The SOA is sponsoring a session on the results of this research at the American Association for the Advancement of Science annual meeting in February 1998. Funding for this research has been provided by the Committee on Life Insurance Research, the Committee on Retirement Systems Research (CRSR) the SOA Foundation, and the Retirement Research Foundation.

Safest Annuity Rule: The Committee on Retirement Systems Research (CRSR) is reviewing the final report of the Safest Annuity Rule Task Force. The report should be released for publication in November.

Asset Valuation Methods: More than 200 Pension Section members provided information on over 1,000 plans in response to a survey to determine the prevalence of various asset valuation methods currently in use. An analysis is now being conducted.

Pension Plan Turnover Rate Table Construction: The CRSR is reviewing the final report of the Non-Mortality Decrements Task Force. The report's availability will be posted on the SOA Web site. The CRSR plans to release the report for publication this fall.

Comparative Effects of Turnover (Turnover and Retirement Rates — Phase 3): The Non-Mortality Decrements Task Force is reviewing the draft final report. The report is expected to be released for publication this fall.

Special research activity

Task Force on Research Effectiveness: A special thanks to all those who responded to the Research Effectiveness Survey; responses are being analyzed. Task force members and Board volunteers recently completed a review of selected research activity. The task force will use the information obtained from the survey and project review to prepare its report to the Board. Keep in touch with Research Pick up a new "Resources from Research" brochure at the literature center during the SOA annual meeting.

Information on the SOA's research activities regularly appears on the SOA Web site (www.soa.org). Questions and comments about any SOA research activity can be directed to the Society's Research Department at 847/706-3500.

Fall seminars for actuarial students announced

Broverman seminars
Seminars for the November 1997 exam period will be held in Chicago and New York by Professor Samuel A. Broverman, associate professor of actuarial science, University of Toronto. The seminars will be held in October and November for Courses 120, 130, 135, 140, 150, 151, and 160.

For more information, contact Professor Broverman at his *Directory* address (phone: 416/978-4453; fax: 416/966-9119; e-mail: sam@utstat.toronto.edu).

Temple University
Temple University Actuarial Institute will conduct intensive review seminars on Courses 140, 150, 151, 160, 210, 220. The seminars will be held in September and October in Philadelphia.

The Casualty Actuaries of the Mid-Atlantic Region will present review seminars on Courses 100, 110, 120, 135, 3B, 3C, 4A, 4B, 5A, 5B, 7, and 9. The sessions will be held in Philadelphia in September and October.

Details are available from Bonnie Averbach, director, Program in Actuarial Science, Temple University (phone: 215/204-8153; fax: 215/204-4712; e-mail: mdavis@vm.temple.edu). Waterloo Actuarial Seminars will be offered for most SOA courses in September and October by Waterloo Actuarial Seminars. Details are available from each course instructor.

Frank G. Reynolds teaches in Waterloo, Ontario, and St. Louis, Mo. In Waterloo, he will offer seminars for Courses 151, 160, 161, 220, I-342C, P-361C, P-362U, F-385, F-485,

I-545, F-590, and V-595; in St. Louis, Courses 220, G-230, I-343U, and I-441U (phone: 519/886-5232).

Keith P. Sharp will teach Course 210 in Chicago; Hartford, Conn.; and Somerset, N.J. (His telephone number is 519/743-2863.)

ASPA's EA-2 course
The American Society of Pension Actuaries (ASPA) will hold an exam prep course for EA-2, Pension Valuation, Practice, and Regulation, in four cities: Chicago, Oct. 4-7; Washington, D.C., Oct. 10-13; Los Angeles, Oct. 25-28; and Dallas, Oct. 30-Nov. 2.

The sessions will be taught by David Farber, an Enrolled Actuary since 1982 and an EA course teacher for 14 years.

Details are available from ASPA (phone: 703/516-9300; fax: 703/516-9308).

Contest announced for educational papers

Papers on any subject related to actuarial science or insurance are invited for the *Journal of Actuarial Practice's* 1998 Actuarial Art & Science Education Contest.

The contest offers first, second, and third prizes of \$1,000, \$500, and \$250 respectively.

Papers do not have to contain original ideas. Priority will be given to papers intended to educate actuaries, especially newer actuaries, about current actuarial practice.

The deadline for abstracts is Nov. 15, 1997; for completed papers,

Jan. 15, 1998. Details are available from Colin M. Ramsay, editor, *Journal of Actuarial Practice*, P.O. Box 22098, Lincoln, Neb., 68542-2098 (phone and fax: 402/421-8149; e-mail: absalom1@ix.netcom.com).

Two 1998 events highlight landmark year for the Actuarial Society of South Africa

The Actuarial Society of South Africa will celebrate its 50th anniversary next year and also host the 1998 fall meeting of the International Forum of Actuarial Associations (IFAA).

The IFAA will meet Nov. 2-3 in Cape Town, South Africa. The society's Jubilee Convention will follow there Nov. 4-5.

Further information on the society's convention will be available in March 1998. The society invites actuaries from other countries to submit papers for discussion at the convention and to attend. Inquiries should be directed to Marius du Toit, program committee chairperson (phone: 27-21-947-3481; fax: 27-21-947-4616; e-mail: marius.dutoit@sanlam.co.za). He also can be reached through the Actuarial Society of South Africa (phone: 27-21-509-5242; fax: 27-21-509-0160).

PRC to issue papers from Social Security symposium

Papers from the Pension Research Council (PRC) symposium "Prospects for Social Security Reform" are expected to be available this fall.

Information on the availability of papers will be posted on the PRC's Web site (prc.wharton.upenn.edu/prc/prc.html). Details also may be obtained from Joanne Tang at the PRC (phone: 215/898-7620).

The symposium was held May 12-13, 1997, at The Wharton School at the University of Pennsylvania. It was sponsored in part by the Society of Actuaries Foundation.

Upcoming SOA meetings and seminars

Oct. 16-17	Equity-Indexed Products	O'Hare Hilton, Chicago
Oct. 26-29	SOA Annual Meeting	Hilton & Towers, Washington, D.C.
Nov. 10-11	Critical Issues in Underwriting	Pointe Hilton Resort at Tapatio Cliffs, Phoenix
Nov. 14-15	Dynamic Financial Condition Analysis	The Hilton, Albuquerque, N.M.
Nov. 19-20	Data Warehousing and Data Mining	Renaissance Hotel, Washington, D.C.
Dec. 8-9	Integrated Approaches to Risk Measurement in the Financial Services Industry	James H. "Sloppy" Floyd Bldg., Atlanta

Additional seminar topics planned for 1997 include "Investment Fall Training," "Form & Implication of Investment Strategies," and "Use of Derivatives by Insurance Companies." The seminar "Conducting Insurance Business in China," originally scheduled for Oct. 29, 1997, has been postponed until spring 1998.

For updates on all seminars, watch for future SOA mailings. Seminar information also is posted on the SOA Web site (www.soa.org) under Continuing Education.

U.S. Math Olympiad team ties for fourth

The U.S. Mathematical Olympiad team tied with Russia for fourth place at the 38th International Mathematical Olympiad (IMO) in Mar del Plata, Argentina, July 18-31, 1997. Pictured are (from front center clockwise) the U.S. team members, Nathan G. Curtis, Joshua P. Nichols-Barrer, Carl J. Bosley, Kevin D. Lacker (alternate), John J. Clyde, Daves Maulik (alternate), Daniel A. Stronger, and Li-Chung Chen; Julie Claeys, representing the SOA; and Bryan V. Hearsey, SOA liaison to the Mathematical Association of America (MAA). The group is pictured in Washington, D.C., at the Einstein Statue (© 1978, Robert Berks). The U.S. team was chosen last spring during the 26th annual U.S.A. Mathematical Olympiad. Its nine sponsors include the SOA and the MAA.



DEAR EDITOR

More innovation needed to fix Social Security

In Marc Twinney's editorial, "Costly delay" (*The Actuary*, May 1997), Twinney states that "Social Security financing is a classic actuarial problem." On the liability side of the equation, he is correct. However, on the asset side, there are a lot more questions than answers.

For example, has anyone yet determined what fraction of the U.S. securities market Social Security accounts will ultimately represent? Do we know when net liquidations of securities will be required to fulfill the retirement income promises made by the system? Do we have a sense of what the impact on securities values will be when this net liquidation begins? Do we have a tax or other strategy in place in the event that the ultimate values of all these individual Social Security accounts don't satisfy the income expectations of the retiree community?

Speaking for myself, I'd like to take some more time before reforming Social Security, because not all the pertinent questions have been asked, let alone answered. At this point, we have an actuarial cost estimate which has as its foundation an assumption about securities markets that is an extrapolation of the past. But there is no historical precedent for what is going to happen in the securities world in the period 2015-2035. Even ignoring Social Security, the assets of many private pension programs are going to be in a liquidating status. The need of retirees for "money" income deriving from their fully funded pensions is going to put extraordinary pressure on securities markets.

In the discussions of various "solutions" to the Social Security problem, there is occasionally some concern voiced about the propriety of the government using private capital markets, but this ultimately is not a political issue. It is an economic issue.

The market value of all those individual Social Security accounts is only as good as someone's willingness to buy the securities at the proper time for the proper value. If workers are unwilling to pay a higher payroll tax to support retirees (and that is, after all, the basic underlying premise of the whole Social Security financing reform effort), why would those same workers be eager to buy securities for the same purpose? Either way, it's still money they cannot spend for current consumption.

Using the private securities markets for Social Security doesn't necessarily solve the problem. The cost/benefit estimate that's driving the excitement is based on a future that is very unlikely to occur as assumed. On this issue, the best civic contribution the actuarial profession can make is to do some innovative cash-flow testing that recognizes market forces in the future. It's not enough to say that stocks will outperform bonds. That may not matter in terms of retiree income.

We need to take the time to look hard at the entire system. In the meantime, let's recognize that the cost of delay might be a whole lot less than the cost of acting without having thought the whole problem through. For actuaries, both as members of a profession and as citizens, there's a lot at stake.

Dennis R. Barry

Still a secret to some

Anna Rappaport is almost right that "it's no secret that women ... live longer than men." (See "Family diversity," *The Actuary*, May 1997.) Unfortunately, that fact and its ramifications remain a secret to the politically correct U.S. Supreme Court. Hence such poorly reasoned cases as *Manhart* and *Norris*.

The court's 1978 decision in *Manhart* held against requiring higher employee contributions from women. The court casually dismissed (the characterization is from the dissent,

not from me) the statement of Senator Hubert Humphrey (D-Minn.), floor manager of the bill which became the Civil Rights Act. In response to a question whether "similar differences [to those of Social Security] of treatment in industrial benefit plans, including early retirement options for women, may continue in operation under this bill ...," Humphrey had responded unequivocally:

Yes. That point was made unmistakably clear earlier today by the adoption of the Bennet amendment; so there can be no doubt about it.

This was brushed off as an "isolated comment," and the decision went precisely the other way. The usual American practice in statutory interpretation is, or was, to pay more attention to legislative history.

While *Manhart* opposed unequal employee contributions by gender, it did state, "We do not suggest that the [Civil Rights Act] was intended to revolutionize the insurance and pension industries." In 1983, the court's decision in the *Norris* case effectively negated *Manhart's* wisely chosen attitude toward the industry.

As a result of all this political correctness, we face numerous unisex absurdities: best known, the fact that a defined benefit pension plan which accumulates more assets to fund a given pension for a female than for a similarly situated male may not reflect that fact in its option factors — lump sums in particular.

Fortunately, the European Court of Justice in the 1993 *Coloroll* case decisively rejected the U.S. Supreme Court's reasoning. Is it not time we tried again to bring some sanity to this issue over here? I would like to think Europe does not have a monopoly on numerate judges, nor on judges willing to listen to numerate laymen/persons like us.

Brian Arthur Jones

Anna Rappaport responds I appreciate the interest in my recent article on women and their needs in retirement. Brian Jones raises some interesting questions. I have focused on how the needs of women are different from those of men, and on the importance of considering those differences in planning for retirement.

More than 10 years ago, the U.S. Supreme Court banned any use of sex differences in mortality in defining the benefits payable from retirement plans. (This does not prevent actuaries from using sex differentiated tables in determining plan costs.) Such a ban is an example of a situation where public policy — in this case, a mandate of equal benefits for both sexes — leads us to do something different from what we would do purely on the basis of actuarial science. However, this treatment of benefit plans is compatible

with an environment in which differences in treatment by sex are banned in the workplace. Strong arguments can be made either for or against the current public policy.

This issue of providing equal benefits is closely related to risk classification. The ability to market insurance products is based on the ability to get reasonable payment based on the risks insured. Where individuals make personal purchasing decisions, costs of coverage will be closely linked to the type of underwriting and risk selection. In a purely competitive market, if one company does not underwrite, then another will probably do so, charge a lower price, and get the better risks, which drives up costs for the company that doesn't underwrite. At the same time, the poorer risks are charged more, and so they may not be able to secure coverage. This has led to many

attacks against private insurance and debates about public policy with regard to insurance. While the issues relating to differences in pension benefits by sex were settled in the U.S. some years ago, risk classification issues remain very much alive today, and appropriate policy is critical to the validity of private insurance sold to individuals.

Brian Jones asks that the public policy with regard to pensions be revisited. I ask other readers to contribute their opinions on this issue, and on risk classification.

I also ask readers to share their ideas related to meeting the needs of families, and on other topics generally. Letters to the editor are an excellent way to share ideas and get some discussion going, particularly on topics where there are different points of view.

IN MEMORIAM

William Richard Christmas
FSA 1943, MAAA 1965

Gerald M. Grassby
ASA 1933, FCIA 1965

Warren K. Gratton
ASA 1991, FIA 1978, FIAA 1978

Glen A. Hazlett
FSA 1982, EA 1981, MAA 1981

Michael Robert Hird
ASA 1981, FIA 1979

Daniel J. Lyons
FSA 1930, MAAA 1965, FCAS 1936

Horace W. McCubbin
FSA 1958, FCIA 1965, MAAA 1980

Donald E. McInnes
FSA 1989, FCIA 1989

David M. Millyard
FSA 1953, MAAA 1967, FCIA 1979

Byron Wright
FSA 1926, MAAA 1965, FCAS 1958

C. Wallace Jordan Jr., FSA 1946, MAAA 1965, who died Aug. 19, 1997, was the author of the book *Life Contingencies*, first published by the SOA in 1952. For more than 30 years, actuarial students used *Life Contingencies* to study the core mathematics of actuarial science. The text is still used by many practicing actuaries as a reference today. Jordan served in the actuarial department of

Connecticut General Life Insurance Co. from 1937 to 1946, when he began teaching at Williams College, Williamstown, Mass. He retired from Williams as professor of mathematics in 1977.

Walter Tyler, ASA 1950, FIA 1939, was the 1965 president of the Actuarial Society of South Africa. He was one of the society's 42 founding members, and he was the first member to be elected honorary treasurer, an office he held from 1948 to 1952. He was an actuary with the Southern Life Association, Cape Town, South Africa, and was general manager of investments at the time of his retirement. He died June 24, 1997.

Correction

The June issue of *The Actuary* referred incorrectly to the new organization formed by the merger of William M. Mercer, Incorporated, and A. Foster Higgins in the story, "New order: Mergers change consulting firms' rankings" on page 1. The name J&H Mercer should have been William M. Mercer Companies, Inc.

Puzzle already run to film-strip into this page.

