The Newsletter
of the Society
of Actuaries
Vol. 31, No. 3
March 1997

The Actuary

Under construction
Work begins on SOA's new continuing ed programs

by Nancy Behrens

In October 1995, a Continuing Education Task Force was formed to conduct a comprehensive review of the continuing education (CE) opportunities provided to Society of Actuaries members. One major finding of the CE task force was that "the current CE system lacks a coordinated effort at long-term strategic planning." The task force recommended formation of a permanent committee that would be responsible for "ensuring that SOA members have access to educational programs and materials that enhance and enrich their basic education and on-the-job performance beyond basic education."

At its October 1996 meeting, the SOA Board of Governors accepted the report of the Continuing Education Task Force and also formed a Continuing Education Coordinating Committee. With the formation of this committee, a forum now exists to provide more coordination and continuity in the CE system.

Each special interest Section and practice area has been invited to have a representative on the CE coordinating committee. In addition, the Education and Examination Committee and the Board Task Force on Education are represented. In general, the CE coordinating committee will not develop materials or programs. Instead, just like today, much of this work will be performed by the Sections and practice areas.

Why is CE important?

The continuing education redesign will increase the opportunities for experienced actuaries to enhance their present skills and to provide new opportunities for actuaries to develop expertise in alternative or emerging practice areas.

The three main reasons for the increased emphasis on continuing education are:

- Professionalism
- A changing work environment
- The new SOA education system, which will require 50 credits of professional development activities for the FSA designation

All professionals must engage in some type of continuing education to stay current in their respective fields and to keep their existing skills sharp.

Also, the environment in which all of us work is rapidly changing, so education must be ongoing. Past President Sam Gutterman has noted that

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Vol. 31, No. 3 • March 1997

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The Actuary is published monthly (except July and August).
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Nonmember subscriptions: Students, $10; others, $25. Send subscriptions to: Society of Actuaries, P.O. Box 95668, Chicago, IL 60694.

EDITORIAL

It's up to us

by Sue A. Collins

To achieve the designation of Fellow of the Society of Actuaries, one follows a fairly clear and well-defined path of education and examinations. This path is updated from time to time to reflect the changing environment in which actuaries practice. I would contend, however, that this process simply provides the minimum qualifications needed to practice as an actuary. It does not fully equip new Fellows to effectively carry out all actuarial functions, nor does it ensure their long-term success.

So, how do actuaries gain the important technical expertise not obtained through the examination process? How do they acquire new skills and knowledge when they change fields or countries of practice? How do actuaries develop the communication, listening, management, and negotiation skills necessary to succeed in today's business environment? And, how do actuaries keep their skills current?

The answer is continuing education. Actuaries must recognize that their FSA designations are only the beginning. Continuing education is a critical next step. As actuaries, we must add to our professional asset portfolios all throughout our careers to maintain our effectiveness, marketability, and professional reputation.

Obstacles within and without

Most actuaries acknowledge the importance of continuing education. However, obstacles — real or perceived — may prevent actuaries from securing the ongoing education needed to expand their skills, knowledge, and, thereby, their value to employers. With increasing work demands, actuaries often see time as a significant obstacle. Lack of funds for external courses may also impede efforts. Further, many actuaries may not know where or how to get certain training. Admittedly, continuing one's education is not always easy. Some actuaries are uncomfortable with the process of improving their communication and management skills. And, unfortunately, some just may not have the initiative.

Perhaps the greatest impediment facing actuaries is the belief that continuing education is not formally required except in situations where they are called upon to give public statements of opinion. This position is potentially dangerous. It is true that actuaries do not have to take exams or submit certified hours, in most cases. However, the Society of Actuaries' Code of Professional Conduct requires that services performed by an actuary meet applicable standards of practice. Implicit in this statement is the requirement for actuaries to have knowledge of all current standards and to keep abreast of any changes. To me, this suggests at least a minimum amount of ongoing education (albeit focused on technical skills).

Many paths are open

Without well-defined, formal requirements, how do actuaries ensure that they are expanding their skills, knowledge, and value to their employers? I can only share my own continuing education experience in hopes of providing some insights for others.

I have obtained new skills and knowledge in a variety of ways:

- On the job
- Through courses provided by employers, the SOA, and organizations serving the business and insurance communities
- Through self-study

- By serving as a volunteer for industry and community groups

I must admit that some of this education was welcome (such as increasing my knowledge of asset / liability management issues) and some was not really welcome but necessary (such as learning to use new technologies). My willingness to pursue this education has been fueled by an ongoing keen interest in the insurance business.

Given the importance of staying on top of technical issues and obtaining the business skills needed for long-term success, this issue of *The Actuary* contains several articles devoted to continuing education. Nancy Behrens writes on the new initiative recently undertaken by the SOA to coordinate its continuing education programs. Cecil Bykerk examines how the proposed Professional Development component of the new exam syllabus sets the stage for self-directed education throughout one's career. Ken McCullum addresses the desirability (and necessity) of continuing education from an employer's perspective. Lastly, Michelle Smith encourages us to think of the Internet as a vehicle for expanding our knowledge.

Continuing education is not optional — it is essential. Resources are available to help actuaries maintain their technical and professional edge. In fact, the SOA recognizes its role in providing key aspects of this education and is working to better communicate the scope and depth of its programs. However, the final responsibility for continuing education lies with each one of us.

Welcome, Ken McCullum

The Actuary welcomes Ken A. McCullum as a new assistant editor. Ken became a Fellow in 1994, eight years after earning his bachelor's degree in actuarial science from Ball State. Today, he is an assistant vice president in the individual life product development area of The Hartford Life Insurance Companies, Simsbury, Conn. He serves on the SOA's I-441U exam committee (Advanced Design and Pricing — U.S. in the Individual Life and Annuity Track) and is a member of the Product Development Section. We look forward to the perspectives Ken can bring as both a life insurance product developer and a member of a new generation of actuaries.

EDITORIAL

Just what is an actuary?

by David M. Holland
1996-97 SOA President

A friend was being interviewed by a national news network. At the conclusion, the reporter asked, "For my lead-in, how can I describe your firm?" The answer was clear and concise: "We're a group of consulting actuaries." The reporter thought for a second and said: "Nobody will understand that; we'll just call you accountants."

Though some of my best friends are accountants, this attitude is partly why the SOA defined its vision as " . . . for actuaries *to be recognized* as the leading professionals in the modeling and management of financial risk and contingent events."

Steve Blow of the *Dallas Morning News* published a humorous article on *The Yearbook of Experts, Authorities and Spokespersons, 1997 edition*. Trying the book out, Steve called a number of organizations, including the American Academy of Actuaries. He had this to say about his actuarial encounter:

"Pity the poor American Academy of Actuaries. Its listing says, 'The Academy's mission is to ensure that the American public recognizes and benefits from the independent expertise of the actuarial profession in the formulation of . . . .' Zzzzzzzzz.

"Bless their hearts. I decided to call the American Academy of Actuaries just so they would remember what their phone sounds like. I . . . asked a hard-hitting actuary question: What is an actuary?

"'An actuary is a financial professional, mathematically trained, who — how shall I say? — projects the costs of future contingent events, events that . . . .' Zzzzzzzzz."

The Academy has made great strides in advancing the recognition of actuaries in the United States, particularly among key decision-makers. However, a lot still needs to be done. There are undoubtedly people who could use actuarial advice who are turning to accountants, economists, and others, or who are not being served at all.

I'd like your help. How would you define what an actuary is? I'm interested in definitions from the standpoint of a clear, concise response for a sound bite, as well as a more formal definition that might be suitable for the *SOA Yearbook* or a dictionary. Humorous or rhyming definitions would be welcome just for the fun of it. Finally, what do you think can be done to improve the recognition of actuaries?

Please send your responses to Cecilia Green, SOA Director of Public Relations (e-mail: cgreen@soa.org; fax: 847 / 706-3599; address: Society of Actuaries, 475 N. Martingale Road, Suite 800, Schaumburg, IL 60173). *The Actuary* will report on the responses.

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continuing education is no longer a luxury but a necessity.

One of the most important changes in the SOA's new education system is the addition of the professional development (PD) component to the syllabus. The PD element will include subjects that are very detailed, likely to change rapidly, and / or are country-specific. Some elements of these subjects are the mainstay of actuarial work. However, they will no longer be tested (in the traditional sense) in the detail that they once were. It can be difficult to adequately test candidates on regulatory and legislative details that can change very quickly. A system is needed to provide this education in formats that are most appropriate for each subject, and the continuing education redesign will address this need.

The work begins

The first large project being undertaken by the CE Coordinating Committee is to determine for each practice area:

- Continuing education needs
- Most appropriate delivery format
- Responsibility for developing materials and programs

Outlines of recommended topics will then be made available, along with a source of continuing education for each topic.

When complete, these outlines will give candidates a model as they design their individual education programs, including the Professional Development credits required of FSA candidates under the new education system to begin in the year 2000. Just as important, the outlines will be helpful to practicing actuaries as they determine ways to follow new developments in their current fields or prepare for career changes.

CE opportunities will take many forms

While the traditional view of continuing education is a seminar or annual meeting, many other vehicles are available. Audiotapes have long been used to bring seminars to those unable to attend. One look at any actuary's "in" basket will confirm that written materials are also used extensively. We anticipate an increased use of videos, teleconferencing, CD-ROM formats, and the Internet. Technology is especially important for offering continuing education opportunities to the SOA's international members.

Ultimately, an extensive catalog of continuing education programs is likely. These will include topics that have not previously been offered through the SOA's CE program. The first to be developed probably will be topics that are still vital to the work of actuaries but that will not be covered in the new E&E courses. The catalog of offerings will offer FSA candidates crucial help in planning their professional development course as they near the end of their examinations.

Though continuing education has always been important for the Society of Actuaries, it is now taking on increased significance. We hope that you will be part of it as both a contributor and a participant.

Nancy Behrens is a member of the SOA Board of Governors and chairperson of the SOA Continuing Education Coordinating Committee. She is an actuary with State Farm Life Insurance Co. in Bloomington, Illinois.

Mail alerts

Ballots

The First Ballots for the Society's 1997 elections will be mailed to all Fellows on March 11. Fellows who do not receive a ballot by March 21 should call Lois Chinnock at the SOA office (phone: 847 / 706-3524; fax: 847 / 706-3599; e-mail: lchinnock@soa.org). To be valid, ballots must be returned to the Society office by April 11.

Directory

The 1997 *Directory of Actuarial Memberships* was mailed to all Society members in mid-February. Any member who has not received a copy should contact Cathy Cimo at the Society office (phone: 847 / 706-3526; fax: 847 / 706-3599; e-mail: ccimo@soa.org).

North American Actuarial Journal

The first issue of the *North American Actuarial Journal* was mailed to all members in February. This new quarterly journal, replacing the annual publication *Transactions,* is free to all members. However, members will find a subscription card in the first issue to pass along to prospective subscribers.

Members who have not received a copy should contact Cathy Cimo at the Society office (phone: 847 / 706-3526; fax: 847 / 706-3599; e-mail: ccimo@soa.org).

Bridge to growth

Flexible PD course will link basic and continuing education

by Cecil D. Bykerk and Jeffrey G. Allen

While the redesign of the SOA's education and examination (E&E) system has been in the spotlight much of the last two years, significant development is now underway in the SOA continuing education (CE) area as well. To a great extent the continuing education changes anticipate the professional development (PD) component of the basic education system redesign. While the main objectives of the CE changes are intended primarily to benefit experienced actuaries, the changes will also strengthen the PD Component of the new E&E system.

The increased coordination of continuing education is critical to the effectiveness of the professional development component. The PD component is a departure from the current education-through-examination tradition, and it is expected to enable candidates to cultivate knowledge in country-specific and rapidly changing topics in a way that is more responsive to the latest developments than in the current examination structure. It can be difficult to fully test candidates on regulatory and legislative details that change very quickly. Enabling candidates to choose the appropriate courses or seminars to round out their education will provide a more effective method of furthering their career objectives.

How it will work

As it is currently envisioned, to fulfill the requirement for professional development, a candidate would need to obtain 50 hours of eligible education within a two-year period. While candidates will not be restricted to SOA courses to fulfill the PD requirement, at least half the PD course of study must come from courses explicitly approved by the Society of Actuaries. To help candidates determine an appropriate PD course of study, a formal advisor, experienced in the chosen area of practice, will be selected by each candidate to provide valuable direction at this stage in the educational process.

A primary benefit of the new professional development approach is that candidates are given a great deal of flexibility in choosing what to learn and how to learn it. This flexibility allows candidates to choose the best subject for instruction and the best education delivery vehicle available, rather than being restricted to a limited and explicit list of self-study courses and exams.

Meeting the challenges ahead

Challenges continue to face the actuarial profession. The problems of three to five years from now will be different from those of today. The actuary works in an increasingly complex and competitive environment. It remains a challenge for candidates in the basic education system, and for actuaries at all levels, to manage the learning process to remain competitive in the present, and also prepare for the future.

Developing the skills and attributes necessary to better satisfy employers and clients is critical to success. The new professional development component will enhance candidate awareness of continuing education needs, and it will provide candidates with the opportunity to systematically plan personal continuing education. The planned enhancements to CE delivery systems, making programs and materials more accessible and affordable, will provide the structure necessary to build the professional development "bridge" from basic education to continuing education.

Cecil D. Bykerk is chair of the SOA Board Task Force on Education, which is overseeing the E&E redesign. He is executive vice president and chief actuary of Mutual / United of Omaha Insurance Co., Omaha, Neb. Jeffrey G. Allen is an education actuary on the SOA staff. He can be reached by e-mail (jallen@soa.org).

Upcoming SOA seminars

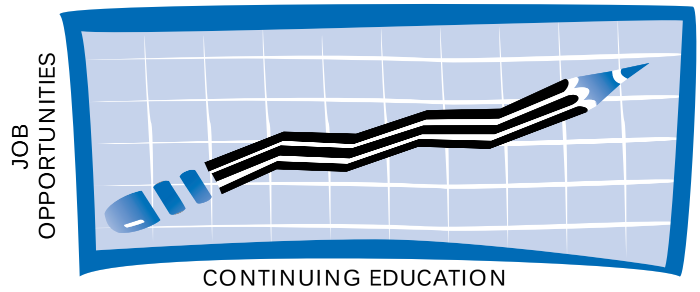
These are new seminars added since the January, 1997, listing in *The Actuary.*

March 26-27	Equity Indexed Products	Denver Marriott City Center, Denver
June 18	ALM Techniques for Product Design and Management	The Queen Elizabeth, Montreal

‘Hire’ learning

What do employers want?

by Ken McCullum



The pace of change today continues to accelerate. This message appears in every summary of the state of our world. The speaker circuit is cluttered with experts who find ways to illustrate this reality.

Whether this ever-changing world leads to opportunity or succumbs to threats lies in an organization’s ability to adapt to change. Businesses need people who can seize the opportunities while fending off the threats. Tomorrow’s successful organizations are populated today with leaders who embrace and manage productive change. The actuary is a professional with the potential to be an organizational leader, navigating through uncharted waters. To fulfill that potential, actuaries must learn new ways to direct their skills toward finding solutions to new problems.

The SOA examination process produces actuaries with a demonstrated ability to educate themselves. Today’s environment simply means that the self-education process must be perpetual. Employers of actuaries recognize the need for actuaries who can thrive during constant change. Thus, job opportunities for actuaries are created by continuing the self-education their careers were born from.

To meet employers’ needs, actuaries must continue their education in two broad areas:

- Technical skills: Actuaries must stay current with the rapid evolution of both actuarial science and the industries in which they work. They must continually acquire new knowledge and master new technical tools.
- Business skills: Executive recruiters in our field say that employers thirst for more “well-rounded” actuaries. Such actuaries will have solid skills in communication, strategic thinking, and negotiation.

Employers will value an actuary’s knowledge only if the actuary can effectively do something with it.

In the new business environment, employers are learning that today’s problems often have no precedents and today’s opportunities are found without roadmaps. This means employers will value your skills more than your specific experience, because skills endure — they can be applied to many varied situations. What you’ve done and how you’ve done it are more relevant than what you know. Above all, employers will want actuaries who are business leaders — that is, who think innovatively in responding to change.

The actuary looking at becoming a business leader should ask: What steps can I take to learn and grow in these areas?

1. How have I incorporated new technology into my business? The buzzwords are everywhere: Internet, intranet, paperless, e-mail, management information systems, CD-ROM. Business applications for these and other emerging tools generally focus on enhancing operational efficiency. Further, technology offers great new tools for improving communication. It allows rapid transmission and easy, timely accessing of information among greater numbers of people than ever before.

2. How have I reengineered my processes? Do you benchmark yourself against competitors? Product development actuaries should continually work on improving their “time to market.” Financial actuaries must find ways to provide more information sooner.

3. How have I adjusted my business to economic conditions? Are you prepared to capitalize on interest rate swings? Similarly, have you built plans that anticipate future events (for example, a bear stock market)?

4. How have I adapted to new competition? What do you know about your competitors? Have you even identified them? If your career has been in the insurance industry, what do you know about banks, investment brokerage firms, HMOs, and other challengers to insurers’ traditional turf?

5. How have I responded to new regulations? Have you digested risk-based capital, Guideline XXX, and the Illustration Model Regulation? Or, do you merely find ways to comply with regulations? Have you found ways to use cash flow testing to better manage your business? Have you influenced any regulatory activity?

Good business leaders will have success stories to tell in response to these and similar questions. The ability to be faster, stronger, and better than before is a by-product of the ability and willingness to learn. In contrast, business leaders whose plans have centered on repeating what was previously done will wonder why they don’t work as well as they used to.

The Society’s new focus on professional development and continuing education will offer actuaries more and better tools for future growth. Both employees and employers should be excited about this new focus: employers because they continue to need successful business leaders, and employees because we continue to need training. The future holds job opportunities and job security for actuaries who know enough to never complete the education process.

Ken McCullum is assistant vice president for individual life product development for The Hartford Life Insurance Companies, Simsbury, Connecticut.

Data on demand

Web sites offer a wealth of information

by Michelle D. Smith

Being well-educated in highly specialized fields is no longer enough. Today's competitive business environment demands professionals who are well-informed in a wide variety of areas, many outside of their traditional focus. Information has become a type of capital, and the Internet is one of the busiest banks around.

However, the picture of the Internet as a useful business resource is not all rosy. Often it's just plain hard to find your way around. To assist in alleviating this problem, here are some suggestions to help actuaries navigate the Internet's World Wide Web and tap into resources that will add value for you and your employer.

Actuarial organizations

Since February 1994, Actuaries Online, provided through CompuServe, has provided a meeting place for actuaries from all over the world and a library loaded with useful professional resources. The explosion in popularity of the World Wide Web has prompted many information services to move away from proprietary networks such as CompuServe. Actuaries Online will follow suit, with all services to be incorporated in 1997 on the SOA Web site (www.soa.org).

One of the Internet's most exciting implications for the profession is the sharing of information between actuarial organizations around the globe via their Web sites. Common offerings include online professional standards, details of meetings and seminars, and examination results. Of international interest are various publications' articles on actuarial topics and lists of links to North American and international resources. The SOA's site offers a searchable database of programs and events for actuarial organizations in some 30 countries. The Canadian Institute of Actuaries site (www.actuaries.ca) includes a French / English actuarial dictionary and a downloadable, user-friendly database of standard mortality tables from more than 10 countries.

Competitive analysis

Pricing actuaries always want to know what other companies' term premium rates are, what they're crediting on their annuities, or what product features they're offering. By far the most comprehensive information out there is for simpler products such as term, fixed annuities, variable annuities, and equity indexed annuities.

Sites providing this kind of information include:

- www.quotesmith.com, where competitive term insurance data is available now, and annuity data is soon to appear, for more than 100 companies
- www.annuity.com, where you can get fixed and equity indexed annuity data
- www.sec.gov, the Securities and Exchange Commission (SEC) site, where you can download the prospectuses of variable annuity products

Some sites provide other data, such as ratings by A.M. Best's, Moody's, and Standard & Poors (S&P). The Insurance News Network (www.insure.com) supplies the full S&P or Duff and Phelps reports for a number of companies.

Of course, you can also go straight to a company's own Web site. Hundreds of life insurers now have their own Web pages, but these vary greatly in quality and quantity of information. There also are about 20 insurance malls (such as www.insweb.com or www.insuremarket.com), each offering products and profiles of several carriers.

Regulatory issues

The NAIC Web site (www.naic.org) can help you keep up on regulatory issues. Resources include news releases and newsletters, downloadable meeting minutes, listings of model regulations, links to state regulator sites, conference call and meeting agendas, and an index to the NAIC research library and NAIC publications. You can also get a state-by-state listing of the status of adoption of certain model regulations.

More than 30 U.S. state insurance departments now have their own Web sites. Some carry the entire text of the state's insurance code (often indexed and searchable). Also featured are model laws recently adopted, publications, bulletins and news releases, financial reports, licensing requirements, and valuation rate tables.

The SEC Web site

An amazing amount of information is available at the SEC Web site (www.sec.gov), especially through one of its main attractions, the EDGAR

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Internet sources (continued from page 7)

database. (EDGAR is also available through a more comprehensive subscriber service located at www.edgar-online.com.)

With EDGAR, the SEC has successfully connected massive databases of up-to-date information to the Internet and also has made it easy for you to find and download exactly what you need. EDGAR contains the full-text version of many of the SEC filings made in the past three years and includes items such as 10Qs, 10Ks, and prospectuses for variable annuities and mutual funds. You can search by company name, type of filing, and date or year of filing. Moreover, a filing is added to the database the day it is filed. EDGAR-ONLINE provides additional information from Hoover's Company Capsules, MarketGuide SnapShots, and CompanyLink Resources.

Considering what the SEC has done in EDGAR, it's mind boggling and exciting to consider what insurance organizations could do. For example, we could see online databases of annual statement data (already available on CD-ROM) or product filings other than annuity prospectuses.

Other organizations

A number of other insurance industry organizations have established very useful online resources. LIMRA International (tccn.com / limra-international / home.htm) provides, to its member companies only, an online searchable database of its research reports, surveys, projects, and publications. ACLI (at www.acli.com) provides current life insurance information (also accessible only to member companies). The LOMA site (www.loma.org) covers a range of activities and includes a monthly article about insurance activity on the Internet. A.M. Best's (www.ambest.com), IASA (www.iasa.org), and the Society of Insurance Research (www.connectyou.com / sir) are among the insurance organizations that maintain Web sites.

Insurance and business news

Many sites already mentioned offer a

Useful Web sites for actuaries

For handy reference, following is a list of the Web sites mentioned in the Internet article.

Actuarial organizations
- Society of Actuaries: www.soa.org
- Canadian Institute of Actuaries: www.actuaries.ca

Competitive analysis
- www.quotesmith.com
- www.annuity.com
- Securities and Exchange Commission (SEC): www.sec.gov
- Insurance News Network: www.insure.com
- Insurance malls: www.insweb.com and www.insuremarket.com

Regulatory issues
- NAIC: www.naic.org

The SEC Web site and EDGAR
- SEC: www.sec.gov
- EDGAR Online: www.edgar-online.com.

Other organizations
- LIMRA International (members only): tccn.com / limra-international / home.htm
- ACLI (members only): www.acli.com
- LOMA: www.loma.org
- A.M. Best's: www.ambest.com
- IASA: www.iasa.org
- Society of Insurance Research: www.connectyou.com / sir

Insurance and business news
- NewsPage Insurance News: www.newspage.com ("insurance" link)
- Yahoo's Insurance News: biz.yahoo.com / news / insurance.html
- *The Wall Street Journal*: www.wsj.com
- Time Warner's Pathfinder: www.pathfinder.com
- The PointCast Network: www.pointcast.com
- PR Newswire: www.prnewswire.com
- Business Wire: www.businesswire.com

Financial markets
- Data Broadcasting Corporation: www.dbc.com
- www.stocktrader.com / summary.htm
- www.stocksmart.com / graphs.html
- Hoover's: www.hoovers.com
- MarketGuide Company SnapShots: www.marketguide.com
- Bureau of Labor Statistics: www.bls.gov / bls and www.bls.gov / cpihome.htm

Technology
- CNET: www.cnet.com (main), www.download.com and www.shareware.com

Finding your way around
- Internet Resources for Life Insurance Actuaries: www.mindspring.com / ~smithy
- The R&D Actuarial Internet Resource List: www.southernlife.co.za / actuary / uct / r&dlist / r&dlist.htm

great deal of insurance industry news. Much also can be found on the multitude of business news sites. Two sites that automatically filter out and categorize insurance-only news are NewsPage Insurance News (located under the Insurance link at www.newspage.com), and Yahoo's Insurance News (biz.yahoo.com / news / insurance.html).

Here are just a few of the other major Web-based business news resources (many of which also allow some user-directed information filtering):

- The interactive edition of *The Wall Street Journal* (www.wsj.com) lets users search its archives for past articles and to personalize the way news is received. A subscription fee is charged.
- Time Warner's Pathfinder site (www.pathfinder.com) draws on business news resources like *Money*, *Fortune*, CNN, Hoover's, and Quick Quotes.
- The PointCast Network (www.pointcast.com) provides free software at its site that you can download to your local drive. Once installed, PointCast acts as a fully automated information collector and filter. It goes out to the Internet at the frequency you select, retrieving only the type of news you specify. PointCast basically does all the work for you.
- PR Newswire (www.prnewswire.com) and Business Wire (www.businesswire.com) publish news releases issued by companies and other organizations. These services maintain their own sites (with searchable databases of news releases) and also feed news into other services like Yahoo's Business News (biz.yahoo.com).

Financial markets

Actuaries often need access to financial data such as stock market indices, treasury yield curves, company stock prices, and market betas. Many business news sites provide this type of information, but financial information sites may offer more.

For the latest and historic treasury yield curves, bond futures, and Dow Jones, S&P, sector, or international indices, you could visit sites such as:

- www.dbc.com (Data Broadcasting Corporation)
- www.stocktrader.com / summary.html
- www.stocksmart.com / graphs.html

These sites also provide individual company data, including the latest and historical stock prices, research reports, earnings, and market betas. Much of this data is pulled from resources such as:

- Hoover's Company Capsules (www.hoovers.com)
- MarketGuide Company SnapShots (www.marketguide.com).

Another comprehensive source of economic data is the Bureau of Labor Statistics Web site (www.bls.gov). This is a fabulous source for CPI (at www.bls.gov / cpihome.htm), employee benefits, and other data that actuaries often need.

Technology

Actuarial work has become very technology-dependent. What actuaries can find on the Internet in this area warrants an article of its own, but here are a few ideas.

Most software and hardware systems used in insurance companies today that were not developed in-house are likely to have technical support sites on the Web. Technical assistance may be available without waiting on hold, and software updates can be easily downloaded. Such sites exist for spreadsheet, database, and word processing applications and for most operating systems.

Because actuarial work is so computer-intensive, it is important to have the right tools to manage files, perform virus checks, and so on. Many of these tools are available on the Web. They're either completely free or can be borrowed for a "test drive." A good resource for these tools is CNET (headquartered at www.cnet.com) through the sites www.download.com and www.shareware.com. As always, check with your technology coordinator before gathering such tools.

Finally, when searching for a new technology product or vendor (e.g., for valuation, illustration, or data warehousing), the Web is the place to start. No other source offers the quality and quantity of up-to-date technology information available on the Internet.

Finding your way around

Those new to the Web, and even Internet veterans, may find it challenging to locate the right sites for their needs and to maintain well-indexed links to them.

For these reasons, some in the actuarial profession have begun building Web pages with links to resources useful for actuaries. One example is the author's own Web site, Internet Resources for Life Insurance Actuaries (www.mindspring.com / ~smithy). Another is the R&D Actuarial Internet Resource List located at www.southernlife.co.za / actuary / uct / r&dlist / r&dlist.htm.

As actuaries become more Internet literate and share more information on and about the Internet, the sophistication of navigational guides for actuaries is likely to improve dramatically. As this occurs, actuaries will increasingly find the Internet a valuable source for information — and continually replenish their capital.

Michelle D. Smith, ASA, FIAA, is a consultant with Tillinghast-Towers Perrin in Atlanta. She is actively involved in investigating business uses of the Internet and related technologies. Her e-mail address is smithmd@towers.com.

Spring meetings info on SOA Web site

Program listings, registration information, and a registration form for the SOA's spring meetings are now available on the Society's Web page (http://www.soa.org) under Continuing Education. Sessions and information for meetings in both Palm Desert and Montreal are listed.

OPINION

Some questions on Social Security

by Michael Sze

Social Security has been the subject of numerous recent debates. Many experts believe in the short-term health of the system while recognizing its long-term problem. The experts, however, cannot agree on a solution. Even members of the Social Security Administration Advisory Council, which issued its long-awaited report in January, failed to reach a unanimous recommendation. They proposed three alternative solutions.

Session 8-8 of the March 19, 1997, Enrolled Actuaries meeting will focus on the proposals and seek to answer these questions:

- What impact do the proposed changes have on private pension plans?
- How will the cost to plan sponsors and the benefits to employees be affected?

The 3 approaches: an overview

Here is a very brief summary of the proposals in the Advisory Council report.

1. *Maintenance of benefits:* Under this approach, current benefits would be maintained. Social Security tax would be increased, and some HI taxes (Hospital Insurance, Part A) would be redirected to the Old-Age and Survivors Insurance and Disability Insurance fund. Furthermore, a portion of the Social Security Trust Fund may be invested in equity.

2. *Individual accounts:* This approach calls for a reduction in benefits provided by the current Social Security system. The reduction would be achieved by increasing the income tax on benefits, raising the normal retirement age, and reducing the formula for individual benefits. Each employee would have to contribute a new 1.6% of pay into his or her individual account. Such funds would be publicly managed, and a part might be invested in equities. The combined benefit under this approach is expected to be comparable to that under the current system.

3. *Personal security accounts:* This approach requires a severe cutback of benefits provided by the current system, leading to a monthly benefit of about $410 in 1996 dollars. Also, the normal and early retirement ages would be increased. Five percentage points of the present 12.4% tax would be diverted into the worker's individual account, which would be privately managed. On average, the combined benefit under this approach is expected to exceed that of the current system. The expected 1.52% transitional cost increase would be financed as a payroll tax or from general revenue, and from additional public debt.

Questions for the road ahead

It is not my intention to enter into another round of debate over these proposed solutions. Instead of arguing over the virtues of each approach, I will raise some questions related to them. The questions are deliberately phrased in a controversial manner to stimulate discussions. Comments, criticisms, and, of course, answers to these questions from readers are welcome.

Is 'privatization' a misnomer?

Proponents of Social Security privatization are promoting a universal system with mandatory participation and a defined contribution formula. The only private elements are the individual accounts, allowing full or partial individual control of investment. As such, the individual bears the investment risk and gets the rewards of favorable investment returns. Can such a system be termed "private"?

Must a 'privatized' system require a defined contribution?

Proponents of privatization usually assume that such a system would be based on defined contributions (a DC system). However, individual accounting also can be achieved through a system that provides defined benefits (a DB system). The only difference is that a DC system has predictable contributions each year and undetermined benefits on retirement, while a DB system provides more predictable benefits on retirement with varying contributions to reflect plan experience. A DB system can still be universal with a set formula. Both DC and DB accounts are portable, moving with the employee as he or she changes jobs. So, must a private system provide defined contribution benefits?

Must a 'privatized' system be fully funded?

It has been argued that for a universal system such as Social Security, whether the system is fully funded or not, the burden of benefit payments for the elderly always lies on the shoulders of the working population. If that is true for the current system, would the situation be different for a privatized system just because every covered person has a private account? How would a "pay-as-you-go" privatized system work? Would it behave like the current system?

Can any proposed change end Social Security's ills?

Is the Social Security system a wealth-distribution device or a goods-production tool? If it is a production tool, what goods does it produce? If it is only a distribution device, how can a change in that system solve any consumption shortage problem? After all, isn't it true that at any time, the production of the workers is shared by the young, the workers, and the old? If the cure for Social Security problems lies in increasing future productivity, doesn't raising productivity become a nationwide concern? How can we expect the Social Security system to remedy a national economic problem? Are we asking a blacksmith to build a car (even if the blacksmith is exceptionally skilled)?

Is there really a long-term production problem?

Most people attribute Social Security problems to a shift in the population's demography. As the baby boomers retire, the ratio of the number of Social Security beneficiaries to the number of workers (called the dependency ratio) increases. It is feared that the rate of production will lag behind the rate of consumption, causing a struggle over limited resources. However, such an analysis presupposes that the quantity of production depends mainly on the number of workers. This may be true if the industrial economy continues into the next millennium. However, if the information revolution succeeds, won't future production depend more on information than manpower? In the agrarian economy, a vast number of farmers was required to feed the nation. The industrial economy drastically reduced that number. Would the information-economy paradigm bring similar changes in the next century?

What's the ultimate guarantee for future productivity?

If the future economy is based on information, what is our best guarantee? Research and education? If so, is the Social Security system the best vehicle to promote research and education activities? How does each of the current proposals address such issues? What can be done through a Social Security system? Would new government policy be a better solution?

If we don't have production problems in the future, do we still have a Social Security problem?

Even with enough production, will future generations think it fair to share a third of their production with retirees? Isn't this an intergenerational equity issue? Doesn't this boil down to an entitlement issue? In this context, don't we still have a distribution problem? Is that what everyone is trying to solve?

What will be considered a fair share of Social Security benefits for any generation? To receive as much as the generation contributes? In this context, should we ask the current generation to contribute a bit more today and expect to receive a bit less in the future?

What is the best way to establish entitlement to future production: by capital accumulation or political clout? In this context, will different investments of the Trust Fund create a different sense of entitlement?

Intriguing questions

As an actuary, I find these questions intriguing. I pose them only to raise discussion. They do not reflect the position of any committee or organization I belong to. *The Actuary* welcomes your comments.

Canada's solution

Incidently, the Canada Pension Plan (CPP) faces funding problems similar to those of the OASDI. The solution, agreed to by the federal government and eight out of 10 provinces, was published recently under the title "Securing the Canada Pension Plan." The solution involves increasing CPP contributions in steps from the current rate of 5.85% of contributory earnings to 9.9% of earnings in six years, coupled with a decrease in retirement, disability, and death benefits. The reserve fund build-up will be prudently invested in a diversified portfolio that may include equity and foreign investments. (A copy of the document may be obtained from the Distribution Centre, Department of Finance, 300 Laurier Avenue West, Ottawa K1A 0G5, Canada; phone: 800/343-8282.)

Michael Sze, a member of the SOA Board of Governors, heads his own consulting firm, Sze Associates Ltd., in Willowdale, Ontario. He can be reached by e-mail at mbstsze@pathcom.com.

Derivatives for risk management to be conference topic

A conference focusing on the use of derivatives in managing financial risks and enhancing profits for insurers will be held May 15-16 at Georgia State University, Atlanta.

"Managing Risks With Financial Derivatives in the Insurance Industry" will include discussions of innovative financial risk management strategies, the regulation of derivatives, both statutory and GAAP financial reporting issues, and new research into the effects of derivatives on insurer risk and return.

The featured speakers will be Andrew M. Alper, partner, Goldman Sachs & Company, and J. David Cummins, Ph.D., the Harry J. Loman Professor of Insurance, The Wharton School. A half-day tutorial on the basics of derivatives will be offered by Prakash Shimpi, FSA, president and chief executive officer of Swiss RE Financial Products, and Stephen D. Smith, holder of the H. Talmage Dobbs Jr. Chair of Finance, Georgia State.

The conference is being co-sponsored by the SOA, the Casualty Actuarial Society, and Georgia State. Additional support is being provided by the Federal Reserve Bank of Atlanta and the American Academy of Actuaries.

Details are available from Richard D. Phillips at the Center for Risk Management and Insurance Research, Georgia State (phone: 404/651-4250; e-mail: rphillips@gsu.edu).

Coincidence?

by Robert L. Brown

Recently I bought my teenage son a T-shirt at a souvenir shop. The front said: "Hours in the day — 24; Beers in a case — 24; Coincidence?"

It turns out that many occurrences in our daily lives which at first appear to be coincidental turn out not to be. Let me add to the list.

While you may not have noticed it, the ratio of male births to female births is dropping. Where it used to be 105 boys to every 100 girls, a measurable decline in the ratio has occurred over the past 20 years (a loss of 2.2 male births for every 1,000 live births in the period 1970 to 1990; the U.S. decline in male births in the same period was 1.0 per 1,000.). The "experts" are looking for an explanation of why this ratio, which used to be extremely stable, has changed. They cite older ages of parents, environmental pollution, fertility drugs, and other factors. But maybe the explanation is more subtle, and yet more profound.

We know that in nature, the ecosystem maintains a remarkable stability. It is well documented that when certain species become overpopulated, the size of their litters declines, and when their population is sparse, the size of their litters increases. This can be quite remarkable, with the difference being two to three times the number of live births in one cycle — whatever is needed to maintain the species.

For the human race, the ratio of 105 male births to every 100 female births was remarkable. Given higher male mortality, this ratio created virtually equal numbers of males and females at the ages of reproduction.

However, things have changed. Mortality in general has improved, especially at the younger ages. The difference between male and female mortality, which until 1970 had always improved in favor of females, has actually narrowed (much of this can be explained by smoking habits). Deaths from accidental causes are down, especially, again, among young males.

Thus, were the natural world to continue to produce 105 male births for every 100 female births, we would have an oversupply of males in the reproductive ages, rather than an equilibrium. What was needed was a decrease in the ratio of male to female live births. And guess what? That's exactly what has happened.

Coincidence? I don't know. However, I do know that not everything in demography has an easy actuarial explanation, which is what makes the discipline so fascinating.

Robert L. Brown is a member of the SOA Board Task Force on Education. He is a professor in the Department of Statistics and Actuarial Science, University of Waterloo, Waterloo, Ontario, and the author of the textbook *Introduction to the Mathematics of Demography*, which is used in SOA Course 161. His e-mail address is rbrown@jeeves.uwaterloo.ca.

SOA Fellows invited to join Japanese Institute

Fellows of the Society of Actuaries can now participate in the Institute of Actuaries of Japan (IAJ) activities and receive their literature. To do this, an FSA should apply to become a "Kenkyu-Kaiin." This Japanese term translates approximately to "research member," but the IAJ uses the term to cover various situations, from honorary members elected by their Board to exam-taking students.

Fellows who apply for this membership status with the IAJ should realize that, as members of the Institute, they will be subject to its Code of Professional Conduct, Standards of Practice, and disciplinary procedures. SOA members are already subject to Japanese standards of practice for any professional work done in Japan or for Japanese clients, whether or not the SOA member is also a member of the IAJ (see Annotation 4-1 of Precept 4 in the SOA's Code of Professional Conduct).

Reasonable fluency in Japanese will be necessary for SOA members to take advantage of the Japanese Institute's publications and meetings, just as it is necessary for an Institute member who becomes an SOA correspondent to be reasonably fluent in English to benefit from Society publications and events.

Anyone interested in applying to become a Kenkyu-Kaiin should contact Mr. Hideyuki Yoshida, FIAJ, FSA, General Secretary; The Institute of Actuaries of Japan; Nihon Seimei Koishikawa Bldg., 3F; 1-12-14 Koishikawa, Bunkyo-ku; Tokyo 112, Japan. The IAJ also may be contacted by fax (81-3-3816-4559) or e-mail (iaj96@lib.bekkoame.or.jp).

Winners of first puzzle contest announced

Skill earned them a place, but luck made them winners of the first puzzle contest sponsored by *The Actuary* and its puzzle editors, Louise Thiessen and Dan Reichert.

From April through November last year, readers of *The Actuary* were invited to complete the puzzle usually carried on *The Actuary's* back page and submit it for evaluation. Names of those solving all five puzzles correctly were entered into a random drawing. The prize was a one-year subscription to *Games* magazine for up to three word wizards.

The winning puzzle-solving units — one individual and two teams — drawn from the 32 solvers of all the puzzles were:

- William A. Allison, SOA member, a retired actuary and life insurance executive, Dunwoody, Georgia
- Marshall Lykins, vice president and actuary, and Joseph M. O'Connor, actuary, both SOA members and employees of New England Life, Boston
- Marcia Vandesteeg, SOA member, senior staff actuary, Lutheran Brotherhood, Minneapolis, and her father, Adolph White, a retired music professor, Northfield, Minn.

Each person will receive a subscription to *Games*.

Update: 1997 prize, rules

A bigger and better contest began on the back of *The Actuary's* January 1997 issue.

Because of the surprisingly large number of winning entries last year, both the selection process and the prize have been changed. In 1997, one winner a month will be chosen at random from all 100% puzzle solvers. The prize for each winner will be an exclusive mug honoring him or her as an F.S.A.P. — Famous Solver of Actu-Puzzles.

Thiessen and Reichert remind players that puzzles must be postmarked by the 15th of the second month after each puzzle appears (e.g., April's must be mailed by June 15). Puzzles sent by e-mail are due on the 15th. Both "snail mail" and e-mail addresses are listed at the bottom of each puzzle.

Readers who design puzzles are invited to submit them for consideration. If your puzzle is used, you'll receive a byline and 100% credit for that puzzle.

Actuary's book accepted by Chinese universities

A book by Society member A. Haeworth Robertson has been translated into Chinese for use as a university textbook in China. *Social Security: What Every Taxpayer Should Know* is being incorporated into that nation's university system under the title *Social Security in America*.

The book's journey to the Far East began in 1993, when Robertson was teaching an actuarial science seminar at Nankai University. "As part of the seminar, I was a guest lecturer for one day at Renmin University of China in Beijing, and officials there were considering introducing actuarial science into the statistics curriculum," Robertson said. "They expressed interest in translating my book and having it published and distributed by the People's University of China Press for use as a textbook in the university system."

Robertson's book, published in 1992, was on the 1993 examination study syllabus for the SOA, the Casualty Actuarial Society, and the American Society of Pension Actuaries.

The SOA library has a copy of both the English and Chinese versions (phone: 847 / 706-3575; fax: 847 / 706-3599; e-mail: ebull@soa.org).

Actuarial education leader honored by math association

Carl C. Cowen, Jr., head of Purdue University's actuarial program, received the Mathematical Association of America's highest award for distinguished college or university teaching of mathematics at the 30,000-member organization's January meeting.

Cowen received the Deborah and Franklin Tepper Haimo Award, which honors extraordinarily successful and widely recognized educators whose teaching effectiveness has had influence beyond their own institutions.

Cowen has been director of Purdue's actuarial science program since 1992. His articles have appeared in *American Mathematical Monthly*, among other publications, and he has supervised six doctoral dissertations. He also has supervised undergraduate research projects, most supported by the Research Experience for Undergraduates program of the National Science Foundation. Eight of the 15 undergraduates he supervised have published articles on their projects.

"My goal is always for students to leave with a better understanding of the role mathematics can play in their work," Cowen responded, "and to enjoy the application of mathematical tools ... in their problems."

RESEARCH CORNER

Task force formed

A task force advocated by Immediate Past President Sam Gutterman has been formed to assess the effectiveness of current SOA research projects. This assessment will take into account the SOA's strategic objectives and financial resources and the impact of research activity on members' professional activities.

Specifically, the evaluation will seek to determine:

- Whether the SOA research structure is well aligned to systematically identify and initiate sound projects consistent with SOA strategic directives and strategic and tactical issues
- How well these projects are conducted and completed, in light of defined study objectives and timing
- Whether SOA staff, volunteers, and funds are used effectively in the process.

The task force met January 31 and finalized a work plan. An integral part of that plan is interaction with members through surveys and interviews. To provide input, please contact Norm Crowder, SOA research vice president and chair of the task force (phone: 941 / 514-3921; fax: 941 / 514-2784) or Warren Luckner (phone: 847 / 706-3572; fax: 847 / 706-3599; e-mail: wluckner@soa.org).

News from CKER

Twenty-eight applications were submitted in response to the research grants competition announced last fall by the Committee on Knowledge Extension Research. Committee members are completing their final review of proposals. Awards will be announced in April.

Several projects have been completed or are nearing completion.

- "Statistical Methods — Count Data": This project develops a method for combining count data from different sources, using maximum likelihood procedures. The methods will be implemented in SAS code.
- "Random Mortality Rates and the Analysis of Selective Lapsation": This research assesses the suitability of various models in analyzing insured life mortality and develops ideas for modeling the relationship between mortality and lapse rates.
- "Credibility Using a Loss Function from Spline Theory: Practical Considerations": This research provides a method to balance the sometimes conflicting goals of linearity and accuracy when using credibility methods to estimate expected claims.

Initial reports for the following projects have been submitted and are being reviewed by the project oversight groups (POGs).

- "Interaction Between Asset Liability Management and Risk Theory": The researcher is studying the relationship between asset liability management and risk theory.
- "Is Social Security a Regressive System?": The researcher is conducting a literature review to identify research addressing this issue with respect to both the Canadian and U.S. social security programs.
- "Bounding and Asymptotic Behavior of Ruin Probabilities in Collective Risk Theory": The researcher is developing new constructive probabilistic methods which enable obtaining two-sided bounds and investigating asymptotic behavior of ruin probabilities in collective risk theory. The intent is to derive accurate two-sided bounds for probabilities of ruin and investigate their limiting behavior by obtaining corresponding convergence rate estimates. The methods developed are intended to be applicable to a variety of risk models and useful for both numerical calculations and simulation experiments.

Finance area update

The modeling conference "Actuarial and Financial Modeling — Towards a New Science," held December 16-17, at Georgia State University in Atlanta, met its objectives of presenting issues and raising questions. The conference was well received by the 60 attendees, who were especially positive about the content and format. The conference was dedicated to the memory of Edward A. Lew, 1973-74 SOA President, a long-time, committed supporter of the Society's research efforts whose dedication served as inspiration for the conference. Contact Sherri Fiore for information on how to receive copies of the conference tapes and handouts (phone: 847 / 706-3537; fax 847 / 706-3599; e-mail: sfiore@soa.org). Some papers presented are expected to be published in an upcoming issue of the *North American Actuarial Journal.*

The "Value at Risk" project oversight group has expanded the scope of the project to investigate integrative approaches to risk measurement in the financial services industry. The POG plans to sponsor the publication of a VAR reader, offering a way to get up to speed on the topic. In addition, a call for papers has been developed in conjunction with the scheduling of a late fall conference on the topic.

Health benefit systems activity

The Managed Care Effectiveness Working Group has engaged Jill Schield from Northwestern University to craft a cohesive document following their proposed outline. A draft document has been circulated for comment.

A POG has been formed to study applications of credibility for health coverages.

Results of the "Group Long Term Disability" pilot study were presented at a session during the October 1996 annual meeting in Orlando. The committee is preparing a report for publication in the next *TSA Reports*.

The Individual Disability Experience Committee expects to complete the "1986-91 Individual Disability Study Report" in the second quarter of 1997.

Life insurance news

The Committee on Life Insurance Research plans to update the "Generally Recognized Expense Table for Life Insurance Sales Illustrations" for 1996 data.

The "1990-93 Structured Settlement Annuities Experience Study" is complete. It is currently available through the Books Department for a copy fee. It will be published in the 1995-96 *TSA Reports*.

Retirement systems activity

The POG for the "Macrodemographic Model Feasibility Study" expects to review the draft report submitted by Capital Research Associates in March.

A research team, led by Michael Sze, completed the "Ontario Plan Termination Study." Copies of the report are available from the SOA Books Department for a copy fee; the report will be published in the 1995–96 *TSA Reports*.

Steve Kopp of the University of Western Ontario, researcher for the "Turnover and Retirement Rates Study," is preparing the final report, incorporating the comments of the POG concerning the second interim report.

The Retirement Plans Experience Committee is preparing a set of mortality tables based on the data collected for the GATT mortality study. Subcommittees are considering graduation and projection methods. An interim report will be released in late summer.

The Safest Annuity Rule Task Force is drafting its final report describing the results of the surveys and the PBGC plan termination data analysis. The report is expected to be released this spring.

New projects include a study of mortality projections, chaired by Marilyn Oliver, and valuing embedded options in cash balance plans, chaired by Bill Torrie.

The "1991-92 Group Annuity Experience Study" report is complete. Copies are available from Karen Haywood in the Research Department (847/706-3547; khaywood@soa.org). The study will be published in the 1995-96 *TSA Reports*.

Committee updates

The Committee on Research Coordination is developing policy guidelines for the solicitation and evaluation of proposals to conduct research activities. Draft guidelines have been distributed to members of the Research Project Oversight Subcommittee and the Experience Studies Oversight Subcommittee for review and comment. Policy guidelines related to charging for research activity products and the creation and distribution of databases for public use have already been approved by the SOA Board of Governors and have been included in the *SOA Policy Manual* and *Research Volunteer Reference Manual* and have been circulated to committee chairpersons for implementation.

During a January conference call, the Research Project Oversight Subcommittee started prioritizing project activity for August 1, 1997, through December 31, 1998. Research ideas are always welcome. Please contact Judy Yore (phone: 847/706-3573; e-mail: jyore@soa.org) in the Research Department with your suggestions.

The Experience Studies Oversight Subcommittee has been working to enhance the value of the SOA's experience studies effort. One of the necessary steps identified is improved communication with experience study contributors and the need for staff to support this effort. During its January 17 meeting, the Board of Governors approved the creation of a new staff position: experience studies administrator. The primary responsibility of this position is to initiate and coordinate regular communication between current and potential future data contributors and other parties to the experience studies process. Karen Haywood, former SOA research assistant, has been promoted into this new position. She assumed her new responsibilities in mid-February.

SOA Monograph Series

Monographs based on SOA research projects available through the SOA Books Department include:

- *A Study of Public Employee Retirement Systems*
- *A Study of Public Financial Guarantee Programs*
- *A Comparative Analysis of Methods of Health Risk Assessment*
- *Group Medical Insurance Large Claims Data Base Collection and Analysis*

The monograph *Valuation of Interest Sensitive Financial Instruments* is available through Frank Fabozzi Associates (215/598-8926).

Keep in touch with research

An updated "Resources from Research" brochure was distributed to the membership with the January issue of *The Actuary*. Additional copies are available from the SOA's Research Department. The brochure presents concise information about SOA research activity end products and how to obtain them.

Remember to check Actuaries Online, the SOA's electronic bulletin board, and the SOA's Web site (http://www.soa.org) for requests for proposals, calls for papers, research reports, and other research information. Comments about any SOA research activity can be directed to the Society's Research Department at 847/706-3500.

Revised notice for May Course 200 candidates

For Course 200, the *Spring 1997 Associateship and Fellowship Catalog* requires the new 1996 *Mercer Handbook of Canadian Pension and Benefit Plans* (11th Edition) by G.M. Hall, not L.E. Coward as stated in the catalog.

The title of Hall's book was incorrect in the notice to candidates in the January issue of *The Actuary*.

Cycling around the world, an actuary meets life

by Jodi Stanton

on the lighter side

No number of Society credits had prepared me for jumping off the cliff before me. Despite all my preparation, in the endless moment I stood watching the new owner drive my car away, a sense of defenselessness overwhelmed me. I was homeless, jobless, and companionless, with a goal to bike more than 20,000 miles of unknown road around the globe.

I had attained my Associateship in 1993 and was employed by a major life insurance company. News of a voluntary separation program was a half-open window of opportunity I squeezed through to pursue my lifetime dream of riding my bike around the world. The busy weeks of transition are still a blur.

Half a world and half a year later, after cycling across the United States and Europe, I left the infinite gray of India and crossed into the Terai plain of Nepal. I was traveling with Michele, a mountain bike racer I met in Hungary, who shared my interest in cycling through South Asia. Although the air cleared and colors brightened, I was hungry. I was always hungry. Dysentery had zapped some 20 pounds from me, and lunch was often skipped as our physical discomfort lowered our tolerance for the curious, omnipresent Indians who gathered by the hundreds when we stopped.

We shared the road through the Terai with oxen and carts. The dust hung thickly on banana leaves, fences, and children, but beyond the road were cobalt skies and multicolored sarongs on women working in the saffron fields.

Within 70 miles, the surface ranged from smoothish to crater-like to liquid. Seven times the road disappeared below the crossing rivers. We struggled to lift our bikes, laden with 120 pounds, through the soup of moving muck, often 100 feet wide and over our knees.

The village where we hoped to camp was low on drinking water, forcing us to push on into the foothills. Trembling with exhaustion, we climbed the next four miles. The wind picked up and the craggy path lost any semblance to a road. Michele took a nasty fall. The sun set and mosquitoes buzzed around our bodies, eager to infect us with malaria.

I took cover in the trees as a dilapidated truck bounced passed, its angles squeaking between obtuse and acute. A young boy hung out of the door and gave me a bony thumbs up. I watched his crooked smile spread across his face and found my spirit again.

In bicycle touring, utopia often follows delirium. A brilliant peacock stood in the forest. Four bearded monkeys swung from the trees. Pink hues raced across the sky over the Himalayas.

We approached giant bushes moving down the road. A closer look revealed feet protruding below — brush gatherers returning to their huts. Our day was finally over. Our wheels rolled past the women and into the village of Chisipani, where we searched for a place to collapse.

That night our hosts prepared for us heaping plates of dal baht, a dish of lentils and rice. I drank six liters of water, and we joined in the village routine. Smoke permeated the air. Silhouettes huddled over open fires,

Villagers near Rudrapur, Nepal, welcomed actuary Jodi Stanton during her worldwide bicycle tour.

doing all the things families do, but in the dirt, in the dark, in the monsoon rains. The Napalese are the happiest people I have ever met.

A thatched roof slumped over our walls of dirt and dung. I washed by the flicker of a dim lantern, ducking out of the flight pattern of low-flying bats. I melted on the rope slats of the wooden bed frame and listened to the soft chattering outside. The heavy, tattered quilt demanded complete placidity. I could not think of a time I felt more fit, more content, or more alive. It was another perfect day.

Another half a world and a year later, I arrived home in Pennsylvania. I had clocked 23,500 miles, cycling through 25 countries and five continents in 20 months. My dog-eared, faded world map had lines drawn across the United States, Canada, Europe, South Asia, Southeast Asia, New Zealand, Australia, and Fiji.

I had developed a minimalist attitude and an ingenuity in mechanics and cuisine. I learned to detect a misplaced fuel bottle by the balance of my bike. While watching for Alaskan grizzlies, Australian crocodiles, or Asian cobras, I could fix dinner, wash my clothes and dishes, pitch my tent, and take a bath in an hour flat.

I learned not to impose limits. I learned that when I let go of security I gain it. I learned that I can land on my feet when I jump off a cliff.

Jodi Stanton is currently giving speeches and presentations about her trip to groups around the nation while she reestablishes her actuarial career. She lives in North Warren, Pennsylvania.

Jodi carries her bike — and 120 pounds of belongings — across the Terai River in Nepal.

2 new specialty guides issued

The Society of Actuaries periodically prepares Professional Actuarial Specialty Guides to offer actuaries the opportunity to become more familiar with specialized practice areas.

This month, the Society is distributing two new specialty guides to members of certain Sections:

- "Dividends and Nonguaranteed Elements" (X-2-97), edited by Cathy Turner and Bill Wilson, is being distributed to members of the Product Development, Financial Reporting, and Investment Sections.
- "Actuarial Aspects of Currency Risk" (V-1-97), edited by Peter Smith, is being distributed to members of the Investment Section.

The dividends guide was developed under the auspices of the Life Insurance Specialty Guides Committee. The currency risk guide was prepared by the Actuarial Aspects of Currency Risk Project Oversight Group of the Committee on Finance Research.

Both guides are available to Society members through the SOA Books Department (phone: 847 / 706-3526; fax: 847 / 706-3599; e-mail: ccimo@soa.org). Individual copies are free to members. A nominal fee is charged for multiple copies.

Each specialty guide focuses on one practice area and includes an overview of the practice area, a description of actuarial roles, and references for major topics within the practice area. A description of each reference is included together with an indication of the knowledge level required for the reference.

Topics of other specialty guides currently under development include life reinsurance, variable life and demutualization. In addition, the guide on U.S. statutory financial reporting is being updated.

The Life Insurance Specialty Guides Committee welcomes ideas for new or updated guides. The contacts are Peter Duran or Martin Snow, who can be reached at their *Directory* addresses.

DEAR EDITOR

Australian actuary says to keep looking

Christopher J. White says that "retirement income planners could do worse than look at the . . . Australian model" in a letter to the editor in *The Actuary*, October 1996.

Perhaps they could do worse, but not much.

The Australian system, developed over the past 13 years, has two legs:

- A federal government pension, payable to some people and dependent on an income and assets test
- A compulsory, employer-financed benefit available only to employees and achieved through defined contributions made to a regulated fund controlled by trustees. Regulated funds are heavily taxed and subject to oversight by a government commission.

Both legs, though primitive in design, are administratively complicated, complex, convoluted, and cumbersome. Speaking as a person who has had, and still has, a bit to do with the system, I can assure readers that the administration of the means-tested government pension and of a regulated fund is not much short of a nightmare, so intricate are the rules.

Considerable objections in principle to the Australian system also exist.

First, many in the population are not covered by either leg. The fund benefit is available only to employees; it ignores about half the population. Further, the 19th- and early 20th-century concepts of long-term employment will not prevail in the next century. People will change jobs frequently and also move between employee and non-employee status.

Second, the fund benefit is based on a defined contribution (accumulation) concept, which throws all the investment and inflation risks on the fund member.

Finally, a wide distribution of outcomes of the fund benefit will occur, because the final benefit in any case will depend not only on the specific inflation and earnings experience but also on the skill (luck?) of the trustees directing investments for a fund

In 2030 and 2040, many bewildered employees will find this disparity of outcomes unintelligible and unacceptable. The government of the day will experience pressure to step in and equalize outcomes by some means or another.

As an example of the political risks, in January 1997 we saw a former politician (a lawyer) advocating a scheme of compensation, effected by insurance, in cases where the trustees of a fund act "without due care." In other words, all members of all funds should suffer, through having to pay insurance premiums, to provide a hedge against the acts of a non-caring trustee. Such a proposal could be described as only one degree this side of insanity; however, it is being put forward seriously. The real beneficiaries would, of course, be the legal profession as lawsuits emerge, and the lawyers are already doing very nicely indeed in advising besieged trustees who are trying to cope with the already over-complicated, bureaucratic-ridden system.

Look again.

Bruce Whittle

Do not pass 'Go' in the wrong direction

The article "We've got two words for you" (*The Actuary*, January 1997) about the need for the exam redesign shows an illustration of a well-heeled gentleman about to pass the 21st-century "Go" on a mock Monopoly board.

I'd like to point out that the real Monopoly board follows a clockwise direction, not counterclockwise as in the illustration. As we take steps toward the next century, let's make sure we're moving in the right direction.

Elliott A. Weinstein

Projections counter megatrend comment

A supposed megatrend [noted in "Why actuaries have an edge in the marketplace," January 1997, *The Actuary*] is "declining resources . . . leading to much lower production of goods and services per person."

No one knows the future, but let's consider projections in the "1996 Report of the Social Security (OASDI) Trustees." For 1996, GDP was estimated at $27,500 per person. The amount was estimated because, obviously, it wasn't known when the report was prepared in 1996. Also, the per person figure refers to the total population; presumably that was the intent of the megatrend citation.

Using the "intermediate" projection, GDP per person is approximately $37,000 for 2030 and $57,000 for 2070. All values are in constant dollars after adjusting for inflation.

Even the "pessimistic" projection gives about $31,000 for 2030 and $39,000 for 2070.

Howard Young

The complexities of duration matching

I believe the main points in Yuan Chang's November 1996 article (*The Actuary*, "Duration matching: Does it take us where we want to go?") are:

- Many believe duration matching is the panacea for investment management challenges.
- Duration matching places artificial and detrimental constraints on the asset allocation decision. For example, the equity investment is not even considered because it does not lend itself to duration analysis.
- Duration matching is suboptimal due to its sole focus on interest rate and its assumption of parallel interest rate movements.

I use the term "duration" to describe interest rate sensitivity, rather than weighted average time to cash flows, of an instrument. Duration matching is one strategy to minimize interest rate exposure, i.e., risk, of a portfolio of asset and liability cash flows. Viewed in that context, duration matching is only one of many alternatives to optimize risk-return tradeoffs. Granted, it is a strategy that focuses exclusively on the interest rate of a portfolio.

Why interest rate sensitivity? Because of the nature of the insurance business, especially in North America, which is highly leveraged and heavily regulated. It borrows from policyholders at a fixed interest rate and profits from the difference between what the insurer earns and what he pays the policyholders. Since the cost of borrowing is directly related to interest rates, their movement has a direct impact on the bottom line.

This is different from the mutual fund industry where the investment company does not borrow, but profits from the service it provides. The following example highlights the difference: A 20% correction does not put a stock mutual fund out of business. However, if an insurer were to invest in the stock market to back its fixed annuity portfolio, such a correction could place it in liquidation.

Also, the insurance industry is heavily regulated. In addition to nonforfeiture requirements, the business is also subject to capital adequacy requirements that are a function of asset allocation.

Therefore, the leveraged and heavily regulated nature of the insurance business, not the conception that equity investment does not lend itself to duration analysis, is what causes the predominance of fixed income investment among North American insurers. Since most of the unanticipated gains / losses associated with fixed income investments come from interest rate movements, the emphasis on interest rate sensitivity naturally follows. On the other hand, in the variable business where leverage is not present, the insurer is more flexible in its asset allocation, resulting in a heavier emphasis on equity investment.

As for Yuan Chang's point that duration matching is flawed because of the assumption of parallel interest rate movements and its inadequate consideration of optionality in the instruments, my observation is that such flaws are due to the limit of available technology and knowledge; they are not inherent in the concept of interest rate sensitivity and duration matching. For example, with directional duration, that assumption is no longer necessary. It is possible to construct a portfolio to immunize against any interest rate movement, but at a great cost.

Therefore, it is more important to develop the framework and tools to understand interest rates and the exposure of the business to their movement, than to focus on duration matching per se. To say one should duration match regardless is to say one should invest in T-bills regardless. To do the former should immunize one from certain interest rate movements, which may or may not be appropriate depending on one's circumstance. To do the latter immunizes one from interest rate volatility, which also may or may not be appropriate.

Duration matching is neither a disease nor a cure; it is merely a tool among many.

Duc X. Ho

Yuan Chang responds:

I thank Duc Ho for his thoughtful comments on my article. He made the point of the article very clear: it is more important to develop the framework and tools to understand interest rates and the exposure of the business to their movement, than to focus on duration matching per se.

I would like to reiterate that "parallel interest rate movements" is a validating condition for total immunization, therefore inherent in the concept of duration matching. Also in the portfolio rebalance process within a strict duration matching framework, transactions associated with optionality produce the effect of "buy high and sell low" systematically. Better technology is not going to change that unless, of course, the process is redesigned to reject duration matching dictates.

I agree that the prevalent reluctance to use equities in an insurance portfolio is not due to duration matching. The latter only adds another practical obstacle. But an insurance portfolio is not any more leveraged than a pension fund. The problem is not how heavily the industry is regulated, but rather how it is regulated, particularly with respect to the separate valuation of assets and liabilities in the accounting definition of solvency. I think this point will become more obvious as we better understand asset / liability management as it should be and not as it is under the dominant framework of duration matching.

Again, I am indebted to Duc Ho for the opportunity to make this point, which I consider even more cogent than that made in my article.

IN MEMORIAM

C. Manton Eddy
FSA 1926, MAAA 1965

Thavanesan Karthigasu
ASA 1984, FFA 1983