



The Actuarial Review

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From the President

Managing Growth

by Mavis A. Walters



Mavis A. Walters, 1998 CAS President, officially receives the gavel from 1997 President Robert A. Anker.

One of the major challenges facing the CAS now is coping with our tremendous growth over the past several years. In some ways we may be in danger of becoming a victim of our own success!

CAS membership has grown approximately 50 percent over the last five years and there is no indication that our growth will diminish any time soon. As a result, I think it's important that we do not take for granted that the way we have done things in the past is necessarily the right way to conduct our affairs in the future.

For example, we all know that the commitment of CAS members to our Society is one of our key strengths. And that commitment is demonstrated by the number of volunteers working on CAS activities.

The 1997-1998 Participation Survey asking for committee volunteers brought in 330 responses.

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1997's Actuarial Top Ten

by Michael A. Walters

For the first time in three years, casualty actuaries did not pick consolidation as the leading story of the year. Despite continuing mergers among insurers internationally and consolidation of big brokers and big accounting firms, a relatively new phenomenon captured the attention of actuaries in 1997: the emergence of risk securitization as a viable option to traditional insurance. In fact, actuaries voted this story No.1 by a much wider margin than they had given to the stories of 1995 and 1996.

The second most important story was the overture by the federal government to welcome banks directly into the casualty business. The Florida Hurricane Commission's approval of catastrophe models followed closely in third place.

The fourth-ranked story involved the further growth of enterprise risk management, which signifies the application of actuarial techniques to general business problems beyond insurance. In fifth place was the rapidly expanding use of the Internet for speed and breadth of communication and research.

Next came the continued integration of health and disability management, which portends a possible change in the workers compensation system. Once again, the CIGNA restructuring appears in the Top Ten, this time in seventh place, as the courts overturned their prior decision. This complicates the possibility of a "good bank/bad bank" strategy for casualty liabilities.

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Committee Explores "Expanding Actuarial Frontier"

Seeks Member Comments on CAS Strategic Plan

by Gary R. Josephson, Member
CAS Long Range Planning Committee

In September 1996 the CAS Board of Directors approved the CAS Strategic Plan developed by the Long Range Planning Committee (LRPC). The plan's purpose is to provide a sharper focus and a more definite direction to the CAS. The LRPC will review the plan in 1998. This is the first in a series of articles that will address specific aspects of the plan.

The CAS Strategic Plan identifies education as a primary function of the Society. Two specific activities identified for the education function are:

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The Importance of Keeping an Open Mind

by C.K. "Stan" Khury

Once in a while some interesting stuff blows in from Cyberspace. Recently I opened my E-mail and found one such item: a collection of statements made by respected members of society. Here is a small sampler:

"I think there is a world market for maybe five computers."—*Thomas Watson, Chairman of IBM, 1943*

"Who the hell wants to hear actors talk?"—*H. M. Warner, Warner Brothers, 1927*

"Heavier than air flying machines are impossible."—*Lord Kelvin, Royal Society, 1895*

"...actuaries are in the business of predicting slices of the future...and stating those predictions in today's terms."

"Stocks have reached what looks like a permanently high plateau."—*Irving Fisher, Professor of Economics, Yale University, 1929*

"There is no reason anyone would want a computer in their home."—*Ken Olson, president, chairman, and founder of Digital Equipment, 1977*

"640K ought to be enough for anybody."—*Bill Gates, Microsoft, 1981*

"Everything that can be invented has been invented."—*Charles H. Duell, Commissioner, U.S. Office of Patents, 1899*

And, as you might imagine, there were many more of these.

Of course, with the benefit of hindsight, we can chuckle about the foolishness of these statements. But consider that these experts were quite serious at the time they made their statements—and in no way were they intending to be funny.

Actuaries, by one generally accepted definition, estimate the current implications of *future* contingent events. Thus, in a very real sense, actuaries are in the business of predicting slices of the future (however narrow those slices may be) and stating those predictions in today's terms. In the name of intellectual integrity and self-examination, I believe it would be fair to ask, given the human condition of actuaries as professional forecasters of the future, what lessons can one draw from the examples above?

We can think of at least two such lessons: One is to be especially sensitive to the need to open the mind when making statements about the future and the other is to learn, once the mind has been opened, to keep it open as we consider and reconsider statements we have made in the past about the future. In other words, no matter what truth our work may profess, it is essential to recognize that the test of time is a very harsh test and much of what we hold to be obviously true may well fail. We need to be constantly aware of that potential.

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Marco Island To Host CAS Spring Meeting

by Deborah M. Rosenberg

The 1998 CAS Spring Meeting will be held May 17-20 at the Marriott's Marco Island Resort and Golf Club on Florida's southern Gulf Coast. Marco Island is a lively resort community offering golf, tennis, swimming, and surfing.

The featured speaker is Dr. Barry Asmus, the senior economist at the National Center for Policy Analysis. Dr. Asmus speaks, testifies, writes, and consults on political and business

will focus on the latest trends in the financial services sector and examine how casualty actuaries can best demonstrate their value in this new era.

The two other general sessions will be presented concurrently. One panel will analyze how the insurance industry can better align its technology and business strategies. The other session will examine the growing influence of "junk science" and its impact on insurance costs.

Attendees will also have the opportunity to hear presentations on *Proceedings* papers and on the call paper program, "Dynamic Analysis of Pricing Decisions." The Michelbacher Prize will be presented to the best paper submitted in response to this call.

New concurrent sessions will include "Introduction to Securitization," "The Florida Committee on Catastrophe Modeling," "Health Issues and Managed Care," "A Look at



Flamingos frolic in the Florida Everglades, located near Marco Island.

Latin America," and "Rating Sport Utility Vehicles."

Optional golf and tennis tournaments will be held Tuesday afternoon. On Tuesday evening, weather permitting, members and guests are invited to an outdoor theme party by the water.

More detailed information on the CAS 1997 Spring Meeting will soon be mailed to members. ■



The Marco Island Marriott Resort and Golf Club offers a host of beach activities in addition to golf and tennis.

problems confronting America. He is a strong advocate of free market/limited government solutions to these problems. Dr. Asmus was named by *USA Today* as one of the five most requested speakers in the United States. His published works include the 1994 book *ClintonCare: Putting Government in Charge of Your Health* in which he counters the Clinton proposals with private sector alternatives.

Four general sessions are being planned. "The Effect of Science and Technology on Risk Classification and Underwriting" will discuss how science can provide valuable assistance in risk classification. It will also explore whether a balance can be established between insurers' underwriting objectives and the insureds' privacy and proprietary concerns. A second session, "The Future of the Actuary,"

Spicer Hurdles 10-Year Milestone with the CAS



Kathy Spicer, the popular CAS Office Meeting Administrator, celebrated her 10th anniversary of service in January 1998.

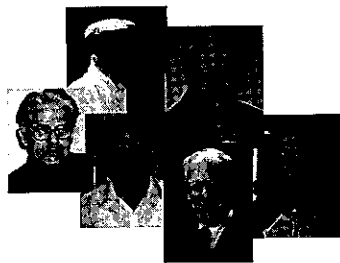
Ms. Spicer joined the CAS Office on January 4, 1988 originally to help with CAS meetings when the CAS was located within NCCI offices in New York. By the time the CAS Office moved to Arlington, Virginia in March 1991 she had become a full-time meeting planner for the growing number of CAS seminars and meetings. At that time she began to work out of her home in Long Island. She currently

has primary staff responsibility for the two CAS meetings and works part-time on the reinsurance seminars.

Ms. Spicer's long service to the CAS has been marked by consistently superb results and wide-spread recognition among the CAS membership for her dedicated, loyal, and unflappable nature.

Congratulations, Kathy! ■

From the Readers



Kudos for 50+ Year Fellows

Dear Editor:

You and your staff did a wonderful job on the 50th anniversary of the class of 1947 in the last *Actuarial Review*. The fact that you got pictures of six of us is amazing. And the additional information about so many of us indicated a lot of hard work....

One minor thing. The table on page 18, "Class of 1922-1947 Fellows," doesn't indicate that those older classes contained a good many people who have died, who were great people in CAS history—like Dudley Pruitt, Tom Carlson, Ham Barber, and many others I could name. The class of 1947 was big, but there were other big ones before that, although not that big. The amazing thing about the 1947 class is how many of us have survived.

I hope *AR* can recall other 50-year Fellows in the future. Although I wouldn't expect a spread every year like you have given us.

Again, many thanks....

Matthew Rodermund, FCAS

Dear Editor:

Thanks for the 50th anniversary piece on the great class of '47 in the *Actuarial Review*.

Bill Wieder, FCAS ■

Strategic Plan

From page 1

1. Integrating actuarial skills into other disciplines;
2. Expanding skills for applications similar to property/casualty risk exposures.

Implicit in these two activities is the suggestion that the actuarial frontier

COOS Launches New Online Study Aids

The Committee on Online Services (COOS), working in conjunction with the Student Liaison Committee, has launched E-Mail Study Groups for those taking CAS Examinations. The new online service has been established for those preparing for CAS Examination Parts 6, 8, and 10. Participants are encouraged to discuss any topic that might be of interest to people who are preparing for the examinations. If this pilot program proves popular, it may be expanded in the future to include study groups for all exam parts.

Along with the E-Mail Study Groups, COOS has established Study Tool Web Pages, which will allow candidates to share useful exam preparation material. Candidates who wish to contribute to the Study Tool Web Pages should E-mail their contribution to Amy Wright, Web Site Assistant, at awright@casact.org. Links to the Study Tool Web Pages can be found in the CAS Web Site's "Students' Corner" at <http://www.casact.org/students/student.htm>.

"COOS is always on the lookout for ways to utilize online resources to benefit members and students," said Israel Krakowski, COOS Chairperson. According to Krakowski the creation of exam E-mail lists and their associated tool web sites are ideas with little cost but potentially great benefits. "These services will probably be most appreciated by actuarial students who are not in big cities or who are not working for large organizations—for them it will level the playing field," said Krakowski. "It should prove to be a useful resource for all students, especially as the Tool Pages grow over time."

To join a study group, send an E-mail to caslists@lists.casact.org. In the body of the message, type *join studygroup6*, *join studygroup8*, or *join studygroup10* as appropriate. An E-mail message will be returned confirming that you have been added to the study group. Contact Mike Boa at mboa@casact.org with any questions. ■

CAS Continuing Education Calendar

March 12-13, 1998

Ratemaking Seminar
Chicago Hilton & Towers
Chicago, Illinois

April 23-24, 1998

Special Interest Seminar on Emerging Technologies
Fontainebleau Hilton
Miami Beach, Florida

is expanding beyond conventional insurance applications into areas that are similar to property/casualty risk insurance. As a consequence, the CAS education (basic and continuing) function will need to move in step with this expanding frontier.

The LRPC would like members' comments on this topic, in particular:

1. What specific areas, outside of the conventional casualty actuarial applications, appear to present opportunities for casualty actuaries in the future?

2. What role should the CAS play in developing and communicating actuarial expertise in these areas?
3. How has the CAS education function adapted to the changing roles of casualty actuaries over time?

We also invite comments on other aspects of the plan. The CAS Strategic Plan is available on the CAS Web Site at www.casact.org/private/stratgic.htm. Written comments should be submitted to John Purple, Chairperson, Long Range Planning Committee, c/o CAS Office. ■

Actuaries in Wonderland

by Sholom Feldblum

The small hand-written notice on the math department bulletin board caught Alice's eye:

*Best Career in America!
Prerequisites: Excellent
Exam-Taking Skills
and Unlimited Endurance*

Alice had always done well on tests, and she loved her numbers. Besides, graduation was fast approaching, and she desperately needed a job. There was nothing else on the notice, except one additional line neatly printed at the bottom:

*Further information available at
107½ West 110th Street*

"Why, that's not far from here at all," thought Alice, though she would have much preferred a telephone number.

It was a cold winter afternoon, and in her haste, Alice left her coat behind. Nonetheless, the brisk walk and the excitement of a new career kept her warm as she made her way toward the address on the notice.

At 107 West 110th Street, Alice found a small cafe, with a sign hanging inside the front door: "Open: 6:00 pm to 11:00 pm." A second-hand bookstore stood at 109 West 110th Street, with volumes on musicology and semiotics in the front window. In between was just the dull, brown brick of the adjoining wall.

"Oh darn!" said Alice. "There are no half numbers for addresses, of course, and that's why there was no phone number. What a cruel joke." It was very cold now, and Alice remembered that she had left her gloves in her coat pockets.

"I wish I could get a cup of hot chocolate now," thought Alice, as she shivered. The only warm air that she could feel was drifting up from a grate

on the sidewalk in front of her. Alice sat down on the grate, and she put her head down on her knees.

As she looked down, she could make out the words in tiny block letters on the edge of the grate:

107½ West 110th Street—Come In

"How strange," thought Alice. She knew never to enter grates on city blocks, but it was so cold on the side-

**Alice descended into
a vast cathedral, with
rows of devout
worshippers...intensely
murmuring in a low,
uniform whisper:
"Arate...arate...arate
...arate...."**

walk, and the air drifting up from the grate made her fingers tingle. So she got up, pulled open the grate, and peered in. There were stairs leading down, but there was no handrail and no lights. Alice descended carefully. Soon the steps began getting shorter, as if they were made for smaller people, and Alice had to walk ever more slowly to keep her balance.

It was a cylindrical stairwell, and as the stairs turned, there was less light from the outside. Alice found it harder and harder to keep her balance upon the ever narrowing stairs, until she slipped.

Sliding softly down the now smooth stairwell, Alice kept descending slowly. A bright light far below illuminated the walls about her. Alice could make out pencils and rulers and calculators

interspersed among books and papers and binders and manuals, all of which were strewn on shelves on the now illuminated walls, shimmering and flickering in the bright light. Along one wall were long thin eels in triplicate swaying in a languid, integral waltz. Along the opposite wall, in an enormous book, were scores of tiny Greek footsoldiers, holding hands in a never ending equation that was forever running off the edge of the page.

The light ahead seemed to shine ever more fiercely. Alice descended into a vast cathedral, with rows of devout worshippers kneeling before a diamond Ark of blinding light, and intensely murmuring in a low, uniform whisper: "Arate...arate...arate...arate...."

Principles

Beside the Ark stood a majestic priest dressed in a white linen tunic and a flowing purple robe, holding aloft a silver baton, and leading the chant of the worshippers. "My," thought Alice, "this is indeed a wonderful career," and she advanced up the center aisle toward the ark.

"Young woman!" thundered the majestic priest, "Where do you think you are going?"

Alice stopped and stammered: "I saw a notice, Sir...."

"Have you no respect?" thundered the priest again, "How dare you approach the Ark of Sacred Principles?"

"Sacred Principles?" said Alice. "What are these Sacred Principles?"

"Do you not hear the chant of the candidates?" replied the majestic priest. He twirled the baton, and the murmur of the worshipers echoed through the cathedral: "Arate...arate...arate...arate...." He turned back to Alice: "They are memorizing the Sacred Principles."

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97's Top 10 Stories

From page 1

Consolidation fell to No. 8 in the 1997 list, with mergers involving four of the Big Six accounting firms.

The ninth story was the start-up of Direct Response in the U.S. However,

if the 12th-ranked story (GE Capital's purchase of Colonial Penn) were combined with it, that combination ("big money backing direct marketing") would have had enough votes to finish seventh. The Year 2000 problem took the final spot in the Top Ten, with the SEC requiring disclosure of problems, if material.

Of particular significance, the actuarial Top Ten does not really overlap A.M. Best's Top Ten property/casualty insurance stories. The actuaries' first- and fourth-ranked stories (and possibly the sixth) show that traditional insurance-related skills may be outmoded in the near future.

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1997's Top Stories for Casualty Actuaries

How They Ranked and Why

Rank	Story	Actuarial Significance	Sum	# Voting	1st Place Votes
1.	Growth of risk securitization	Implications on expanded capacity beyond alternative catastrophe coverage	359	45	16
2.	Insurers urged by OCC to welcome banks into insurance business	State regulation vs. federal regulation implications	297	43	12
3.	Florida Hurricane Commission approves catastrophe models	Computer modeling vindicated as a method of estimating loss costs	279	42	3
4.	Growth of enterprise risk management	Expands use of actuarial skills beyond traditional insurance	243	36	9
5.	Expanded use of Internet	Expansion and speed up in research and communications capability	199	39	1
6.	Continued integration of health and disability management	Eventual change to workers compensation system	184	31	1
7.	CIGNA restructuring overturned in court	Potential limitations on ability to seal off problem areas	143	32	1
8.	Mergers: Peat Marwick and Ernst; Coopers and Price	Distractions and conflict of interest questions vs. global expansion	115	26	0
9.	Start up by Direct Response in U.S.	Can UK success story be repeated in the U.S.?	102	22	0
10.	SEC requests disclosure of Year 2000 problems	Forces facing problems earlier; less chance of "occurrence" in 2000	96	19	0
11.	Prop. 103 auto class plan filings ordered into effect	Complicated rules perpetuated	94	21	1
12.	GE Capital buys Colonial Penn	Potential expansion of direct marketing	65	14	0
13.	AIA proposes repeal of McCarren Ferguson price controls	Will casualty rate regulation ever be repealed?	65	15	0
14.	Merger of Marsh and J&H	Expanded influence of megabrokers	53	12	2
15.	Lloyds gets A rating from rating agencies	Lloyd's survives, with implied acceptance of new actuarial techniques	52	17	0
16.	Global consolidation of insurers continues	Actuaries will need to have global focus	51	9	1
17.	State Farm successfully tests Florida's new rate arbitration feature	Arbitration as a new form of regulatory rate dispute resolution	46	10	0
18.	U.S. Supreme Court rejects asbestos class action settlement	Might limit future mass torts	45	14	0
19.	Volatility of stock market	Start of hard market?/Asset-based overcapacity not permanent	32	6	0
20.	International deregulation continues	Overseas "laboratories" for U.S. insurers?/more international opportunities	24	5	0

The results serve as important inputs to the Long Range Planning Committee on potential future directions of actuarial practice. As in prior years, this year's candidate stories were culled from the trade press to be externally oriented, and were not intended to cover CAS internal actions.

"The results serve as important inputs to the Long Range Planning Committee on potential future directions of actuarial practice."

In the first round, participants drawn from the Board, Executive Council, Committee Chairs and Past Presidents, narrowed the initial list of 53 stories to 25 for a final vote.

This Delphi study then highlighted reasons for number one selections by various voters, and the final round produced some changes. The final scores were tallied using the NCAA sports polling methods (10 points for first place down to 1 point for tenth place).

Continuing this year is the "Bellwether" prize for the best predictor of the final consensus of all participants, and again there are three prizes. **Anne Kelly** won the Insight Award because the final Top Ten consensus came closest to her original picks, with weighted scoring (10 points for the No. 1 pick). **Chuck Bryan** was second.

The Consistency Award goes to **Phil Ben-Zvi**, whose ten picks came closest to the final consensus voting, up to the top 29 stories. He beat **Kevin Thompson**, who was a close second.

Finally, the overall Bellwether Award went to **Chuck Bryan**, who had the best combined score in both of the above categories. **Phil Ben-Zvi** was second and **Mavis Walters** was third.■

Chicago Will Host CAS Ratemaking Seminar

Many CAS members, candidates, and other insurance professionals wishing to learn a little bit about a variety of topics are expected to attend the CAS 1998 Seminar on Ratemaking, one of the Society's most popular educational offerings. The seminar, held March 12-13 at the Chicago Hilton and Towers, will offer more than 50 sessions.

"Attending the ratemaking seminar is an important way for actuaries to keep current with the latest procedures in insurance pricing, particularly from a continuing education standpoint," said Mary Hosford, Chairperson of the Committee on the Ratemaking Seminar. "The committee tries to keep it fresh each year by adding new sessions (this time there are 13 new topics) and also by changing the overall program structure (this year a skit will be put on as the general session)," said Hosford.

Among the seminar's highlights, an Introductory Track will cover standard ratemaking techniques for the major lines of business. This track is directed

at candidates, underwriters and those who may not be very familiar with specific concepts or types of insurance. Other seminar sessions will cover Catastrophes, Data Management, Reinsurance, Workers Compensation, Dynamic Financial Analysis, and Managed Care.

New sessions for 1998 include "Emerging Data Issues," "Applications of Geocoding," "Econometric Modeling in Workers Compensation," "International Reinsurance," and "The Actuary as Sole Practitioner." Other new sessions include "Insurance Fraud," "Applications of the Mixed Exponential Distribution," "Introduction to Managed Care Structures," "Reinsurance Implications of Managed Care," and "The Use of Credit History and Other Demographic Data in Underwriting."

The CAS will post a list of attendees on the CAS Web Site one week before the seminar. The list will also be available at the seminar. For more information on registration and accommodations, contact the CAS.■

Journal of Actuarial Practice Calls For Papers

Actuaries are invited to submit papers for possible publication in the *Journal of Actuarial Practice*, an international refereed journal. Papers may be on any subject related to actuarial science or insurance; they do not have to contain original ideas. Preference will be given to those papers intended to educate actuaries on the methodologies, techniques, or ideas used (or that can be used) in current actuarial practice. The journal also accepts technical papers, commentaries and book reviews. However, all articles must have some relevance to actuarial practice.

Please send an abstract of the paper by Friday, May 1, 1998 and five (5) copies of the completed paper by Friday, June 19, 1998 to:

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Square Dancing, Rising Sun-Style

by Brian D. Haney

As exams rapidly approach, I find myself performing the semi-annual ritual of dreaming of what I would rather be doing than studying (fire walking comes to mind). Several times before exams I have thought of leaving the profession and becoming a missionary, or a monk, or maybe joining the Peace Corps. I never dreamt of going to Japan to square dance.

Strange as it may seem, and almost nothing seems as strange as square dancing in Japan, people do go to Japan to square dance. In fact, a member of our Society has done this very thing.

Our FCAS, let's call him Ronin (Japanese term for wandering samurai), started his career in typical fashion at Aetna. During his long and fruitful career at the big A, he got a yen for square dancing. Now, square dancing is NOT a big item in Hartford, which, given the number of actuaries there, is a shock (with so many of us being squares, after all). Some of the best square dancing in the world is found in Japan.

Ronin and his wife began commuting to Japan on a regular basis to sample the local square dancing scene. After a few years he wisely decided that the actuarial business was simply getting in the way of his pursuit of square dancing, so he packed his bags and headed east. He spent four years in Japan, occasionally working as an actuary (just so that life didn't get to be *too* much fun). Ronin enjoyed Japan tremendously, remarking that the people are extraordinarily polite and hospitable, and that Japan itself is a very clean and beautiful place...AND there is no need for a car! What a perk!

But getting back to square dancing...The sport, although not scored, does have grades or levels, eight of them in fact: basic, mainstream, advanced 1, advanced 2, and



Chuck Berry and his wife, Betsy, perform the intricate "sport" of square dancing.

challenge 1, 2, 3, and 4. There are only 100 people in the world who dance at the highest level, challenge 4. Square

"Strange as it may seem...people do go to Japan to square dance."

dancing is not a formal competitive sport—there are no winners and losers—but the dancers themselves are competitive and are deeply satisfied if their square, consisting of eight people, performs well. It's serious business.

The amazing thing about square dancing is that unlike regular dance, no one is trying to be the most graceful or elegant—these aren't the objectives at all. The dancers are just trying to perform the maneuvers that the caller is giving—this is the challenge of square dancing. The caller (the person yelling out "do-si-do") is giving

instructions that the dancers have to interpret and execute in a prescribed fashion. The caller gives out increasingly difficult instructions until the dancers are hard-pressed to execute them in time. It is more a test of one's wits than a test of one's fleet feet: Think of it as a 2-D puzzle which a group of eight people must solve while it's being told to them, and there happens to be music playing. This puzzle-solving aspect of square dancing is exactly what attracted Ronin (who hated "real" dancing) in the first place. Ronin assures me that the music is purely incidental—no rhythm or particular dancing skills are required, which leaves hope for people like me.

So whatever happened to Ronin? He returned from Japan, settled in State College, Pennsylvania, and became a stamp dealer, of all things. He still hasn't returned to the actuarial profession—by his own admission, he doesn't have enough time to work. Our Ronin has now moved on to greener pastures. But Chuck Berry informs me that he may go back to work as an actuary when he turns seventy, by which time I may have passed Part 10.■

Photo courtesy of Chuck Berry; graphic courtesy of Coell, Inc.

ABCD Proposes Actuarial Bill of Rights

by Jerome A. Scheibl

WASHINGTON, D.C.—The ABCD has proposed that a “bill of rights” for actuaries appearing before the ABCD be included in the American Academy of Actuaries’ bylaws. The ABCD drafted the new proposal in response to concern by actuaries about removing certain procedural details from the Academy’s bylaws.

This past summer, the American Academy of Actuaries exposed for comment a proposed revision to Article X of its bylaws. Article X establishes the ABCD and sets forth its procedures. The draft changes proposed, among other things, that certain procedural details be removed from the bylaws and provided for in the ABCD’s *Rules of Procedure* to eliminate some of the rigidity inherent in prescribed practices. The ABCD believes this would enable the ABCD to function in a manner that is more consistent with the fact-finding, non-adversarial nature of its charge.

This proposal caused a great deal of comment from members of the actuarial profession—much of this coming from members of the CAS. The main objection was that removal of certain guarantees of due process from the bylaws would give too much discretionary authority to the ABCD.

The ABCD never intended to reduce actuaries’ procedural rights; its

plan had been to move the procedures into its *Rules of Procedure*. However, it is apparent that a number of actuaries feel very strongly that these protections should continue to appear in the bylaws. The ABCD plans to address these actuaries’ concerns by suggesting that the bylaws include a “bill of rights” that promises actuaries who appear before the ABCD certain procedural rights.

The new draft provides that an actuary who is the subject of an inquiry is given the following rights:

- Notice of the inquiry along with the factual basis for the inquiry and an opportunity to comment on the matter before the ABCD determines whether an investigation should be initiated;
- Notice of the ABCD’s decision to refer the inquiry to investigators, their names, and an opportunity to object, for cause and in writing, to any of them;
- The opportunity to comment on an Investigative Report before the ABCD uses the report to vote on disposition of the inquiry;
- Reasonable notice of a hearing to be conducted regarding the actuary’s work and/or conduct, including the issues for inquiry and the date, time, and place of the hearing;

■ Within a reasonable period of time prior to a hearing, the names of any witnesses whose testimony the ABCD expects to consider and copies of case-specific documents not previously provided to the subject of the inquiry that the ABCD expects to consider;

■ Notice and a reasonable opportunity to respond to additional relevant material, case-specific documents and witnesses that the ABCD first learns of during a hearing, if the ABCD intends to consider such. The notice shall include a copy of such documents and the names and last known addresses of witnesses;

■ Prompt notification of the results of an ABCD hearing after they have been determined and formulated.

A discussion of other changes in the Article X draft resulting from comments received during the initial exposure process can be found on page 3 of the November 1997 *Actuarial Update*. The CAS Board of Directors will discuss the new draft at its February 1998 meeting. The new draft, if approved by the Academy Board in June 1998, will go to the Academy membership for a vote. At the same time, the ABCD also plans to expose its new *Rules of Procedure* for comment before formal adoption. ■

The Ethical Issues Forum: Revisiting “A Case for the ABCD”

Editor’s Note: This article is part of a series written by members of the CAS Committee on Professionalism Education (COPE) and the Actuarial Board for Counseling and Discipline (ABCD). The opinions expressed by readers and authors are for discussion purposes only and should not be used to prejudge the disposition of any actual case or modify published professional standards as they may apply in real life fact situations.

A Case for the ABCD?

The last issue of the *Actuarial Review* hypothesized a dilemma faced by an ABCD member with regard to the origin of a complaint. Recall that Mae Day, the ABCD member, read about a possible violation of the Code of Conduct by Phil Harmonic, FCAS, MAAA, in a newspaper article quoting Insurance Commissioner Livingstone I. Presume. The questions in that article cited alternative ways in which the ABCD

comes to know of possible Code violations and asked whether the source of information had any effect on how the ABCD would treat the matter.

A reader pointed out that actuaries have the ability to detect the misuse of actuarial knowledge and it does not matter how other actuaries find out about such misuse. The real question that should guide the ABCD, the reader

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AERF Sponsors 10th Annual Practitioners Award Contest

Each year, the Actuarial Education and Research Fund (AERF) invites submissions for the Practitioners Award. The award is intended to recognize the considerable research done by actuaries in non-academic work, and encourage the publication of research done in pursuing normal job duties. Submissions for the award, which do not need to be written as a formal paper as long as the work is described clearly, must be received by June 1, 1998. They should be addressed to Curtis E. Huntington, Executive Director, Actuarial Education and Research Fund, 475 N. Martingale Road, Suite 800, Schaumburg, Illinois 60173-2226 USA. The winner will be awarded \$1,000 (US). Winning entries will be published in the *Actuarial Research Clearing House (ARCH)*. To view the full announcement on the CAS Web Site, go to <http://www.casact.org/research/aerfawrd.htm>. ■

Editorial

From page 2

We still remember some of the examination readings that contained absolute statements about five percent being the proper provision for underwriting profit. We also remember a variant of that reading, that investment income should be excluded from the ratemaking process. And when it comes to loss reserves, we still hear an occasional debate on the question of the appropriateness of discounting loss reserves.

With respect to each of these and other items, those who believed the "older" points of view to be self-evident truths have had to revise their

beliefs, however grudgingly.

One more point. The challenge of keeping an open mind applies to institutions as well as to individuals. By institutions we mean those who occupy the leadership positions—such as boards of directors, committees, officers, councils, and task forces. It has been our good fortune that the actuarial profession has been most scrupulous about testing the waters first before adopting anything that might look like a self-evident truth. There have been many of these opportunities in the past and we hope there will be many more, whether they have to do with the attempt to articulate a set of actuarial principles that underlie all of actuarial science or the attempt to

'96 PCAS Errata

An errata sticker for the 1996 *Proceedings of the Casualty Actuarial Society* has been sent to all CAS members subscribers and is included in the *Actuarial Review's* mailing envelope.

The errata concerns the paper "Allocated Loss Adjustment Expense Liabilities" by Ruth E. Salzmänn. The title for Exhibit 1, Part 2, which appears on page 108, should be "Paid ALAE History" instead of "Paid Loss History."

The errata will also be sent to all who have purchased or received the 1996 *Proceedings*. If you did not receive the errata, please E-mail Elizabeth Smith at esmith@casact.org. ■

revise the rules that govern the discipline procedures of the ABCD.

Keeping an open mind is a priceless virtue no matter how sure we may be about what we believe to be truth and no matter how sincere and noble our efforts may be about articulating that truth. However, keeping an open mind is an active process that requires each of us to take a personal responsibility to make our voices heard whenever our views are asked for. Let us endeavor to keep our minds and the minds of our actuarial institutions open. The leadership surely appreciates it whenever members speak up when their opinions are asked for. ■

Ethics

From page 9

contends, is "what response best serves society?"

The reader goes on to say that "another issue raised in this case study is very real—someone who must choose between individual profit and the greater good. We as a profession have a conflict of interest in policing ourselves. The CAS exists to further the interests of its members. In fact, as a member I count on it to do so. While

the CAS may find it wise to punish members who cause harm, we are under no obligation (other than moral) to do so.

"Regulators have no conflict of interest in judging the abuse of [the] franchise" granted to actuaries by society in the use of their specialized knowledge," the reader adds. He further states, "The least we actuaries can do is make our expertise available to regulators in fulfilling their role without hindrance. [M]aintenance of high standards of practice adds value to our franchise." ■

These articles are intended to be a discussion forum. Comments on these or any other ethics issues such as the proposed actuarial "bill of rights" (see story, page 9) are welcome and will be summarized in the next issue of the *Actuarial Review*. You may send comments by letter to the *Actuarial Review* at the CAS Office, by E-mail to actuaryjoe@aol.com or by fax to (715) 845-0935. Your name won't be used unless you specifically request it. ■

How DFA Can Help the Property/Casualty Industry, Part 5

The Annual Statement Does Not Start On Page 3!

by Stephen T. Morgan with contributions by Susan T. Szkoda

Editor's Note: This is the fifth in a series of articles on Dynamic Financial Analysis (DFA). Stephen T. Morgan, ACAS, is vice-president and actuary of the Millers Group in Fort Worth, Texas. Steve has been very active in all phases of DFA serving on a broad variety of CAS Committees.

For many years, like other actuaries, I concentrated only on loss liabilities. Premiums were used only to compare to incurred losses. Analyzing losses for pricing and reserving projects consumed all of my time. I did not stop to consider where cash came from to pay losses or even what the accountants did with the premiums received by the company. Since the historical purview of actuaries had always been pricing and loss reserving, it is no surprise that losses were my dominant interest.

Several external forces caused property/casualty actuaries to begin considering the asset side of the equation more carefully:

- Insurance regulators required pricing actuaries to include investment income considerations in certain rate filings.
- Investment income became important in pricing such products as paid loss retros and finite risk contracts.
- Actuaries became involved in such activities as loss commutations, loss portfolio transfers, mergers and acquisitions, and valuations. In all of these, cash flow projections and loss reserve discounting were important "pieces" of the particular financial transaction.
- The so-called underwriting cycle appeared to cease, and the industry faced a seemingly endless soft market. Investment income became increasingly important because achieving underwriting profits became increasingly rare.

■ In the early 1990s, the federal government attempted to become involved in insurance regulation. State insurance departments reacted by increasing their efforts regarding solvency monitoring. Risk-Based Capital and Dynamic Sol-

"Several external forces caused property/casualty actuaries to begin considering the asset side of the equation more carefully."

vency Testing were some of the new tools developed.

In light of these forces, and realizing life actuaries had been considering investment concepts for years, we began to consider investments. Two separate events caused me to think about the asset side of the equation: $\text{Assets} = \text{Liabilities} + \text{Surplus}$.

Early in my career, I was the actuary for a now defunct insurance company. It folded for several reasons, one being my assessment that the IBNR reserve needed to increase by a factor of 2. Somewhere between increasing the reserves and shutting down the company, I became acutely aware of the relationship between reserves and the cash needed to pay out those reserves. Until that time, I felt that my only responsibility was to set the reserves: Someone else would worry about paying the losses. However, I learned that I also had to assess the company's ability to meet this financial obligation. Part of this assessment

is the "how" of meeting that obligation.

The second event occurred when I was an actuary at a company purchased by a leveraged buyout (LBO) firm. The most important thing to the LBO firm in buying my company was the ongoing cash flow. Could it support the debt payoff, the insurance liability obligations, and pay dividends? The three most important considerations were cash, cash, and cash.

Before the acquisition, I headed up the loss reserving area. Since I also had a broad understanding of company operations, I got the job of establishing the asset/liability management (ALM) procedures. We used durations to estimate how well matched our assets and liabilities were. We estimated cash flows for nearly every asset and liability for both the company and the holding company. I concentrated on the company liabilities and non-invested assets while the outside asset manager concentrated on the invested assets and the holding company debt.

We began with the notion that most reserves eventually become cash. Actuaries know how to estimate loss reserves and turn factor selections from paid loss development triangles and ultimates into payout patterns. We learn how to calculate present values during the early part of our careers. So, doing durations on loss liabilities should not be difficult once we understand the concept of duration.

We then looked at invested assets. The first time I attended a staff meeting at the asset manager's office, I found that the jargon, buzzwords, and alien concepts (CMO, PAC, Swaps, Options, Swaptions, Strips, Tigers, LYONs, arbitrage, put, call, short, long, hedge, and PIKs to name a few)

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DFA

From page 11

were unsettling. I was extremely intimidated by the near mystical aura of *INVESTMENTS*.

Later, I realized that the cash flow of an asset, such as a bond, is identical in concept to the payout of losses. Once the intimidation passed, I determined the reserve (market value or cost) and the payout. Just as with losses, the risks that affect these values had to be understood.

While ALM and duration are important concepts, they represent a relatively small portion of the brave new world of Dynamic Financial Analysis (DFA). DFA is the process by which an actuary analyzes the financial condition of an insurance enterprise. Financial condition refers to the ability of the enterprise's capital and surplus to adequately support its future operations through a currently unknown future environment. Actuaries, through their training and experiences, are uniquely qualified to perform DFA analyses.

DFA allows actuaries to take a holistic approach to insurance. We look at the interactions between assets and liabilities and their effect on surplus.

"While ALM and duration are important concepts, they represent a relatively small portion of the brave new world of Dynamic Financial Analysis."

We look at scenarios, we employ strategies and we model (deterministic or stochastic basis) the company operations to check sensitivities and the effects of our assumptions. We can give

management more options in addition to new tools to manage and improve financial results. More importantly, we can give management additional understanding of how the company works.

In short, we become financial actuaries. We do not lose the reserving or pricing portions of our repertoire. We realize that we can now put a new spin on the concepts we already know in order to analyze investments and perform DFA exercises. The old parochial focus on reserves or pricing changes to a broader focus on the operations and interactions of the company. Reserves do not tell the "story" of a company; rather, it is told by the cash from the reserves and the interactions of assets and liabilities. The annual statement really starts on page 2. ■

CAS Miami Seminar Focuses on New Technologies

As new technologies transform the insurance industry, they are certain to have a great impact on how actuaries do business. The CAS Seminar on Emerging Technologies, which will be held April 23-24, 1998 at the Fountainebleau Hilton in Miami Beach, Florida, will explore many issues concerning the latest technologies. Some of the topics covered will include data management and technology in a claims reserve environment, the power and pitfalls of geocoding, the development of geocoding software, and object-oriented technology for actuaries.

Cost of the seminar is \$475 for CAS members and \$575 for nonmembers. Contact the CAS Office for more information. Reserve your hotel accommodations by calling (305) 538-2000. Rates are \$165 for single and \$195 for double. ■

Birmingham, UK To Host International Congress of Actuaries

The 26th International Congress of Actuaries, which is jointly organized by the Faculty of Actuaries and the Institute of Actuaries, will be held in Birmingham, England, June 7-12, 1998. ICA Bulletin Three, which contains the registration document and accompanying details for the 1998 Congress, has now been sent to all members of the IAA who have expressed an interest in attending.

If you would like to attend the Congress but have not yet received Bulletin Three, please contact ICA Secretariat, Conference Associates & Services International Ltd., 4 Cavendish Square, London, W1M 0BX, United Kingdom; Telephone +44 (0) 171 499 0900; Fax +44 (0) 191 629 3233; E-mail: ica98@thguk.com. A copy will be sent to you immediately.

Faculty of Actuaries President Paul Grace and Institute of Actuaries President Duncan Ferguson are expecting an exciting and stimulating week as actuaries and their partners from around the world gather in Birmingham to celebrate the 150th anniversary of the actuarial profession. Ferguson and Grace hope members of the CAS will be able to join them there. ■

Palm Desert Site for '97 CAS Annual Meeting

PALM DESERT, C.A.—More than 700 CAS members met in Palm Desert to attend the 1997 CAS Annual Meeting. The lush desert resort afforded attendees numerous opportunities for leisure in addition to the wide variety of educational programs offered at the meeting. Attendees played in golf and tennis tournaments, toured the Coachella Valley, and took advantage of the many soothing and relaxing spa treatments offered by the Marriott's Desert Springs Resort and Spa.

At the Business Session held Monday, November 10, the CAS recognized 109 new Fellows and 95 new Associates. In his address to new members, **Ronald L. Bornhuetter** advised them to continue expanding their education. "I realize that the last thing you want to think about is more examinations," said Bornhuetter, but he encouraged new members to achieve additional designations such as CPCU and Chartered Financial Analysts. "For many of you, your actuarial training is a platform which prepares you for entry into many different and enriching areas of our business. Surprising results can occur if you are willing to take some risks," he said. He also stressed the importance of becoming involved in the CAS and other actuarial organizations.

In his Presidential Address on November 10, CAS President **Robert A. Anker** said that actuaries "are well positioned to grow in non-traditional fields, even as our traditional fields expand." Anker also called on the CAS to continue improving its service to non-US members and to "beef up" support in research and further development of actuarial science and its application. ■

Robert A. Anker (right), 1997 CAS President presented Paul M. Otteson (left) with the Rodermund Service award at the CAS Business Meeting, November 10, 1997.



Seven Award Winners Honored

Winners of annual CAS Awards and the first American Risk and Insurance Association (ARIA) Prize were honored at the the CAS Business Session held during the 1997 CAS Annual Meeting last November in Palm Desert, California.

Among the honorees, **Paul M. Otteson** was awarded the Matthew Rodermund Service Award. The award recognizes a CAS member, or members, who have made significant volunteer contributions to the actuarial profession. Otteson earned his Fellowship in 1957 and has been involved in numerous CAS committees for over three decades.

Stephen P. Lowe and **James N. Stanard** received the Hachemeister Prize for their paper entitled, "An Integrated-Dynamic Financial Analysis and Decision Support System for Property Catastrophe Reinsurers." The Hachemeister Prize is awarded to the author of an ASTIN paper selected by the CAS as having a significant impact for North American actuaries and practicality of application.

Leigh J. Halliwell tapped the 1997 Woodward-Fondiller Prize for his paper "Loss Prediction by Generalized Least Squares." Commemorating the work of Joseph H. Woodward and Richard Fondiller, the award is intended to stimulate original thinking and research and is given to the best eligible paper each year submitted by an Associate or Fellow who has attained his

or her designation within the last five years.

Sholom Feldblum and **Glenn G. Meyers** shared the 1997 Dorweiler Prize which commemorates the work of Paul Dorweiler. The award is subject to the same conditions as those specified for the Woodward-Fondiller Prize, except that the Dorweiler Prize will be awarded to the best eligible paper each year submitted by an Associate or Fellow who has attained his or her designation more than five years ago. Feldblum won for his paper "Personal Automobile Premiums: An Asset Share Pricing Approach for Property-Casualty Insurance" and Meyers for his paper "The Competitive Market Equilibrium Risk Load Formula for Catastrophe Ratemaking."

The first-ever ARIA Prize winner, **Daniel Zajdenweber**, presented his paper, "Extreme Values in Business Interruption Insurance" at the CAS Annual Meeting. Zajdenweber was awarded the prize at the annual ARIA Meeting, held in August 1997. The prize is made to the author of a paper published by ARIA that provides the most valuable contribution to casualty actuarial science. Papers eligible for the prize include articles, workshop articles, and invited papers published in the *Journal of Risk and Insurance* during the preceding year. Papers published in new ARIA journals may also be eligible for this award. ■

From the President

From page 1

Procedures call for committee or task force chairpersons to contact all the members who indicated that they were very interested and willing to serve if asked to join a particular committee. The chairpersons are supposed to make those calls to interested members even if no positions are currently available on the committee.

Some of the feedback from the most recent survey indicated that these procedures are not always followed and that we have some very dissatisfied members who are becoming skeptical about the CAS leadership's commitment to the members.

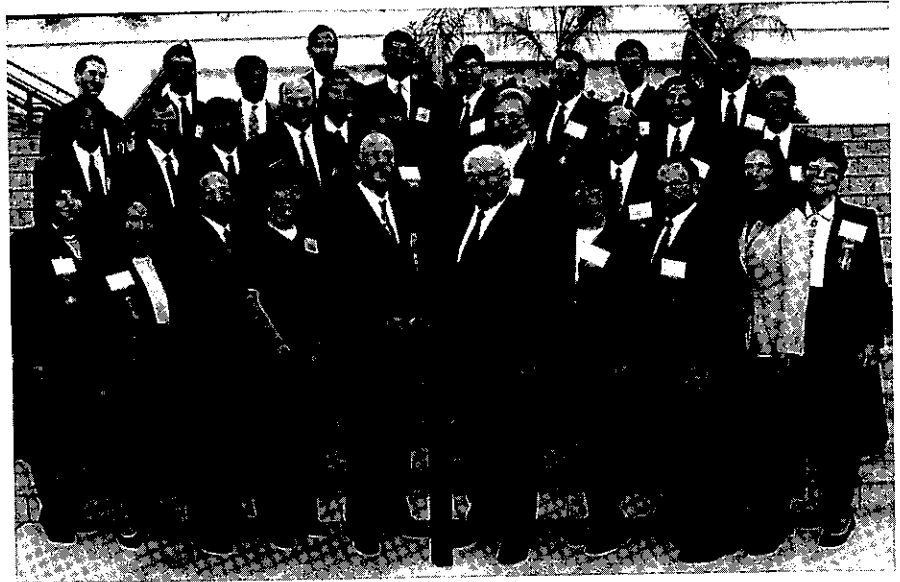
I believe it is very important that we address these concerns because of the critical importance of a strong volunteer base to the continued success of the CAS. For this reason we have set up a special Task Force on Volunteer Resources chaired by CAS President-Elect Steve Lehmann. The task force will review the actual use of the participation survey by committee chairpersons and the success in placing volunteers. The task force will also determine whether we need new procedures to make sure that they are responsive to the members who complete the survey.

My own sense is that there may be a tendency on the part of some committee chairpersons to select as new members those actuaries that they already know, or who are known to other committee members—sort of an "old boy" or "old girl" network. If this is the case then we need to stir things up a bit, to give new members a fair chance to participate.

I am afraid that there may also be some "geographic preference" taking place, although getting any statistics on this is difficult. Are volunteers from the West Coast not selected because of a concern that they won't be able to attend meetings very frequently? How about volunteers from Bermuda? It seems to me that, if those members do volunteer, then committee chairpersons should not be ignoring them based on their own perceptions. I am not say-

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New Fellows Honored at



Row 1, from left: Elizabeth Ann Lemaster, Julia C. Stenberg, Ira M. Kaplan, Meredith G. Richardson, Leigh J. Halliwell, **CAS President Robert A. Anker**, Linda Kay Torkelson, Gary E. Shook, Milary N. Olson, Carol Ann Blomstrom. **Row 2:** Jeffrey Eddinger, Glenn A. Tobleman, Robert W. Van Epps, Kurt J. Johnson, Carole M. Ferrero, Robert G. Downs, Andrew W. Moody, Raymond J. Reimer, Larry D. Anderson. **Row 3:** Robert D. Share, Richard T. McDonald, William B. Cody, Mark R. Johnson, George P. Bradley, Roger A. Yard, Robert S. Ballmer II, Keith A. Mathre, Kevin J. Olsen, Gregory D. Larcher.



Row 1, from left: Andrew S. Ribaud, Gayle L. Wiener, Steven L. Berman, Mary H. Bready, Annette J. Goodreau, **CAS President Robert A. Anker**, Theresa A. Turnacioglu, Bradley A. Hanson, Deborah L. Stone, Ginda Kaplan Fisher. **Row 2:** Claus S. Metzner, Hou-Wen Jeng, Jeffery M. Zacek, Daniel K. Johnson, Rebecca A. Kennedy, Daniel J. Merk, Daniel D. Blau, Turhan E. Murguz. **Row 3:** David S. Harris, Robert E. Maton, Robert J. Moser, David D. Hudson, Timothy P. Aman, Bernard Dupont, Joan M. Klucarich, Doug A. Zearfoss. **Row 4:** Jeffrey F. Deigl, Carl J. Sornson, Aaron W. Newhoff, Robert J. Hopper, Peter V. Burchett, Jason A. Kundrot, Jeffrey D. White, Lori A. Snyder. **Row 5:** Steven J. Symon, Timothy Messier.

1997 CAS Annual Meeting



Row 1, from left: Victoria G. Stachowski, Jill C. Sidney, Erica L. Weida, Mary E. Fleischli, CAS President Robert A. Anker, Amy J. Himmelberger, Alexander G. Zhu, Paul J. Hancock, Regina M. Puglisi. **Row 2:** Kimberly J. Mullins, Kevin D. Strous, J'ne E. Byckovski, Jonathan D. Adkisson, Stephen P. Sauthoff, Charles A. Dal Corobbo, Elizabeth R. Wiesner. **Row 3:** Geoffrey T. Werner, Terry M. Seckel, Jeffrey P. Shirazi, Gregory Riemer, Tad E. Womack, Jean Cloutier, Collin J. Suttie, Edward M. Kuss.



Row 1, from left: Andrea C. Bautista, Christine E. Schindler, Rita E. Ciccariello, CAS President Robert A. Anker, Mari Louise Gray, Gerald T. Yeung. **Row 2:** Kevin H. Shang, Patrice Raby, Philippe Trahan, Christian Fournier, Salvator T. LaDuca, Julie T. Gilbert. **Row 3:** Lowell J. Keith, Guy R. Danielson, John A. Stenmark, Thomas Struppeck, Michael A. Ginnelly, Jennifer M. Levine. Not pictured are Pierre Bourassa, Kirsten Rosa Brumley, John Frederick Butcher II, Dennis K. Chan, Paul Robert Hussian, and Daniel A. Tess.

From the President

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ing that I know this is happening—just that it may be a possibility that cannot be ignored.

Our increasing membership base provides both a challenge and an opportunity. The obvious challenge is to attract and retain members' interest in becoming active participants in CAS affairs. The opportunity may be to expand the traditional charge given to our committees or to establish new committees to take advantage of the increasing diversity of our members' practice areas and thereby expand the scope of CAS activities. And I am sure there are many other possibilities.

If you have any thoughts on how we can make the process work better for all CAS members, please let me hear from you. And I know Steve Lehmann would be interested in your ideas as well. ■

Membership Survey To Be Sent In Spring

by Alfred O. Weller
Membership Survey Task
Force Chairperson

The 1998 CAS Membership Survey will be sent to CAS members this Spring. The quinquennial Survey affords a major opportunity to align CAS activity with the needs of our members. The Membership Survey Task Force asks for your help in identifying topics of greatest interest to CAS members.

Please communicate your suggestions regarding survey issues to Todd Rogers at the CAS Office before **March 16, 1998** (E-mail trogers@casact.org). Let us know what feedback from CAS members will help you most.

On behalf of the Task Force, I thank you for your help. ■

New Associates Honored at 1997 Fall Meeting



Row 1, from left: Shama S. Sabade, Kathleen T. Cunningham, Bruce P. Williams, Lisa M. Pawlowski, Linda Kong, **CAS President Robert A. Anker**, Stephanie J. Michalik, Sherri L. Border, Richard E. Meuret, William A. Mendralla. **Row 2:** Joyce Chen, Kevin D. Burns, Philippe Gosselin, William H. Scully, Noelle C. Fries, Todd W. Lehmann, Brian T. Suzuki. **Row 3:** Jonathan G. Taylor, Robert J. Bilotti, Kevin J. Fried, Robert J. Moss, Nasser Hadidi, Denise F. Rosen, Christopher J. Monsour, Joel F. Witt. **Row 4:** Micah R. Gentile, Michael R. Schummer, Paul C. Barone, Steven B. Oakley, David M. Vogt, Anna M. Beaton, Yuhong Yang, Nitin Talwalkar.



Row 1, from left: Tracy A. Ryan, Laura M. Williams, Matthew H. Price, Halina H. Smosna, Michelle L. Harnick, **CAS President Robert A. Anker**, Julie Perron, Rebecca S. Bredehoeft, Christy B. Schreck, P. Cheryl White. **Row 2:** Susan I. Gildea, Richard A. Brassington, Christopher D. Jacks, Christopher P. Coelho, Richard S. Krivo, Alice M. Underwood, Andrew S. Becker, Jean-Claude J. Jacob, William R. Jones. **Row 3:** Michael J. Bluzer, Chauncey E. Fleetwood, Mark Paykin, Michael J. Christian, Brandon D. Keller, Gregory Hansen. **Row 4:** Stephen D. Clapp, Charles Letourneau, Christopher D. Goodwin, David J. Pochettino, Walter L. Jedziniak, Helen P. Neglia, Alexander Krutov, James A. Partridge, Charles P. Neeson.



Row 1, from left: Sophie Dulude, Avivya S. Stohl, Linda J. Bjork, **CAS President Robert A. Anker**, Cynthia J. Heyer, Jacqueline L. Gronski. **Row 2:** Christopher G. Gross, J. Scott Alexander, David E. Marra, Marc E. Levine, Sarah Krutov, Kevin F. Downs. **Row 3:** Michael J. Miller, David M. Flitman, Christopher M. Norman, Hugo Fortin, Nathan K. Voorhis. Not pictured are Michael J. Curcio, Michael Edward Doyle, Kristine Marie Firminhac, Sy Foguel, Kenneth Jay Hammell, Ia F. Hauck, Ali Ishaq, Robert B. Katzman, Kirk L. Kutch, Daniel Patrick Maguire, Tieyan Tina Ni, David Anthony Ostrowski, Anthony George Phillips, and Claude A. Wagner.

Random Sampler

From page 5

"I have never heard of these Sacred Principles," said Alice. "What are they about?"

"Very well," said the priest. "Tell me, what is a rate?"

Alice looked puzzled. "A rate? What do you mean?"

"Clearly an unprepared candidate," said the priest. "An insurance rate. What is a rate?"

"That's easy," answered Alice. "A rate is the price you pay for insurance. Just last week, in fact, when I had to buy auto insurance, my agent looked up the rate in his manual...."

"Untutored lass!" thundered the priest. "No points—no points at all!"

"No points?" asked Alice.

"No points; not even partial credit. A rate is not that at all. If it were so easy, we would be no better than underwriters. As every learned actuary knows, *a rate is an estimate of the expected value of future costs*. That is the first Sacred Principle."

"Now that's silly," said Alice. "The word 'rate' means 'price per unit' or 'charge per unit.' What if this price is not an estimate of the expected value of future costs? You can't just take a word and make it mean whatever you want it to mean."

"When we use a word," said the majestic priest, "it means just what we choose it to mean—neither more nor less."

"The question is," said Alice, "whether you can cause simple words to have such convoluted meanings when every underwriter follows the dictionary definition."

"The question is," corrected the priest, "who is to be master—the actuary or the underwriter?"

Alice felt reprimanded. "Still, that's a great deal to make a simple word mean," she said in a hushed tone.

"When we make a word do a lot of work like that," huffed the majestic priest, "we always pay it extra."

Alice gazed around the cathedral, feeling the intensity of the young worshippers, their eyes focused on the papers in front of them.

"Is that the only Sacred Principle in the Ark?" asked Alice thoughtfully. "It

seems an awfully small principle for such a large and expensive Ark."

"That is just the first of the Principles. Tell me, for what does a rate provide?"

This all sounded a bit absurd to Alice, but the diamond Ark sparkled so brilliantly that she figured it might be worthwhile to try out this strange jar-

"We don't just add words," sneered the priest. "Each word of the Sacred Principles is chosen after months of deliberation by the Board of Exalted Standards."

gon. So she smiled and said: "A rate provides for the expected value of future costs."

"No, no, no points at all!" cried the priest. "The principle is: *A rate provides for all costs associated with the transfer of risk*. So try again, young woman, as the third Sacred Principle teaches us, for what does a rate provide?"

"OK," said Alice. "OK. A rate provides for all costs associated with the transfer of risk."

"No points at all, none at all!" screamed the priest, as the white linen tunic heaved up and down. "*A rate provides for the costs associated with an individual risk transfer*."

"Isn't that what I just said?" asked Alice.

"Not at all," said the priest. "You recited the second Sacred Principle, but you were asked about the third Sacred Principle. You left out the word 'individual.' No points at all."

"You mean every time you add a word you have a new Sacred Principle?" mused Alice.

"We don't just add words," sneered the priest. "Each word of the Sacred Principles is chosen after months of deliberation by the Board of Exalted Standards."

"Aren't there any principles that say

something meaningful?" asked Alice. "People are always complaining that insurance rates are too high, or that insurance companies discriminate among consumers. Shouldn't the Sacred Principles say something about that?"

"Of course," came the reply. "Tell me, young lady, when is a rate reasonable and not excessive, inadequate, or unfairly discriminatory?"

"Now that's a fair question," exclaimed Alice happily. "A rate is excessive if it is too high, it is inadequate if it is too low, it is unfairly discriminatory if it sets unequal prices for consumers of similar risk...."

"No, no, not even partial credit!" thundered the priest. "You have learned nothing, nothing at all, even after you have been told the first three Sacred Principles. Rather, you must say: *A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer*."

"I think I'm beginning to understand," said Alice. "First you make the nouns mean gibberish. Then you take the adjectives and you make them mean the same gibberish. How much did you have to pay these words?"

"Careful, lass," replied the stone-faced priest, as a hush fell over the cathedral. "You may be tried and sentenced for that by the Arbitrary Tribunal for Condemnation and Despair."

Considerations

"This still seems sparse for such a spacious Ark," said Alice. "Moreover, these principles seem awfully abstract. Don't you have anything more specific?"

"Of course," said the priest. "The Ark of Sacred Principles contains eighteen essential considerations for ratemaking, covering every aspect of the actuary's task. For instance, what consideration should be given to investment and other income?"

"Now that's a serious question," thought Alice. "After all, people have argued about the proper consideration to be given to investment income for 75 years now, and there is still so much dissension." She wasn't sure, though,

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Random Sampler

From page 17

how to begin her answer; there were so many ways to start.

"Well, here goes," thought Alice, and she began: "Investment and other income may be considered by means of a cash flow model, an internal rate of return model, or an options pricing model..."

"No, no, all wrong, all wrong," said the priest. "Try again."

"Of course," thought Alice, "the interest rate. One has to start with the interest rate." She began again: "One can define the assumed interest rate as the net investment yield of the company, a risk-free Treasury rate, or a risk-adjusted rate...."

"No, no, no credit at all," said the priest. "You are terribly ill-prepared for the exam. The correct answer is that *The contribution of investment and other income should be considered*. But we'll give you another try. How should the effect of reinsurance arrangements be considered?"

"I think I'm beginning to catch on," thought Alice, and she said: "Consideration should be given to the effect of reinsurance arrangements."

"Perfect!" cried the priest. "Full credit, full credit! It seems that you have been studying after all."

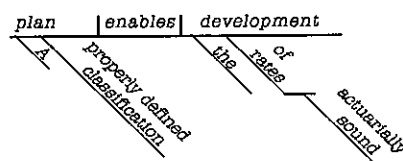
"Well," said Alice, "it's really not that hard once you get the hang of it."

"We'll give you one more," said the priest. "What about classification plans?"

This one seemed a bit more difficult, but Alice decided to give it a try: "Consideration should be given to the effect of classification plans."

"No, no, that's terrible, all wrong!" screamed the priest. "Rather the consideration is as follows: *A properly defined classification plan enables the development of actuarially sound rates*."

Alice thought hard, but she could make no sense of the sentence. She could find the verb of the sentence, the subject, and the object, but she had no idea what the sentence was trying to say. She didn't want to offend the majestic priest, so she said only: "Was this consideration also made by the Board of Exalted Standards?"



**Alice...could find
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and the object, but
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the sentence was
trying to say.**

"Of course," replied the priest. "After months of deliberation, compromise, and consensus."

"Compromise and consensus?" said Alice. "I guess this was all that they could agree on with regard to classification plans."

Credibility

Alice felt disappointed. The Ark still sparkled, but its luster had dimmed. The Sacred Principles seemed like word games without substance, like glass jewelry that shone from afar but was a penny trinket up close. Surely there was more to the Sacred Principles—something that inspired the devotion of the candidates.

It was getting late, and Alice wished to be back on campus by dinner time, so she asked directly: "What is the best part of these Sacred Principles?"

"The best part?" repeated the Priest. "Why, that must be the section on Credibility."

"Credibility?" asked Alice. "What is that?"

"Credibility is the crown jewel of actuarial theory," answered the Priest, "the most enduring contribution to our science. Credibility theory is what differentiates the simple underwriter from the pure actuary. Many years ago, before the revelations of Bühlmann, people thought of credibility as a measure of the predictive value that the actuary attaches to a particular body of data. Now we know that this was the error of our forefathers; after all, credibility is not an attribute of the body of data itself. Rather, Bayesian theory teaches us that credibility measures the

relative predictive power of one set of data compared with another. A data set has no *inherent* credibility; its credibility depends on what else we have for making rates. If we have no other information, we may assign a high credibility value to the data set. If we have other information that is an equally good or a better predictor of future costs, we may assign a low credibility value to the first data set."

Alice was pleased. Here was good theory, reflecting the brilliance of the Ark. "Go on," she said.

"In those dark ages," continued the Priest, "people made meaningless statements about credibility such as 'A group should be large enough to be statistically reliable.' Our perspective now is that we take all the data that are relevant and we assign them credibility weights according to their relative accuracy in predicting future loss costs. We no longer speak about data sets being 'statistically reliable,' even if we knew what that meant."

"Are these candidates taught the proper understanding of credibility?" asked Alice admiringly.

"Of course," replied the Priest. "Early on in their careers, before they even approach the Sacred Principles, they must learn the fundamentals of Bayesian credibility."

"I would love to hear how the Sacred Principles summarize what you have told me," said Alice.

The Priest held up the silver baton, and a hush fell over the candidates. "From the Consideration on Credibility," he intoned: "*Credibility is a measure of the predictive value that the actuary attaches to a particular body of data....A group should be large enough to be statistically credible....*"

Alice was silent for a long moment; then she turned and walked slowly back to the stairwell leading up to the sidewalk and back to campus. As she ascended, she heard again the constant murmur of the candidates: "*Arate...arate...arate...arate....*"

"It is a beautiful Ark," she thought. "I wish them well." ■

Institute and Faculty of Actuaries Announce Brian Hey Prize

The General Insurance Steering Group (GISG) Committee of the Institute and Faculty of Actuaries is delighted to announce the Brian Hey Prize for the best paper on the topic of "The Financial Theory of General Insurance Risk Pricing." The first prize will be £1,000 and the second prize will be £500. Winning authors will be invited to present their papers at the joint GISG/ASTIN conference on October 7-10, 1998 to be held in Glasgow. Winning authors will be encouraged to publish the papers more widely and will also be granted entry to the conference at the academic rate.

The Prize is open to actuaries and non-actuaries, within or outside the UK, but will only be granted if papers of sufficient quality are received. Papers should be no more than 50 pages long, include an abstract and be submitted in English by July 1, 1998 to Barbara Beebee, secretary of the GI Board at the Institute of Actuaries, Staple Inn Hall, London. Guidance on the format of the paper can be obtained from Barbara Beebee.

The paper should be submitted under a pseudonym, so authors should include a sealed envelope bearing the author's details. The GISG Committee will decide on the winning paper and their decision is final. The 1998 GISG Committee is likely to be Nigel Gillott, Colin Czapiewski, Julian Lowe, and Kathryn Morgan. Winners will be notified during August 1998 and announced at the 1998 GISG/ASTIN Conference. ■

Brainstorms

CASNET Poses Reserving Question

by Stephen W. Philbrick

Ruy Cardoso recently posted an apparently straight-forward question on CASNET. His question generated many responses that touched on a variety of actuarial topics. I will comment on some of these aspects. Readers interested in the unadulterated version can read the seventeen posts at <http://www.casact.org/research/casact.htm>.

Assume you wrote an aggregate excess policy with a one-year term on July 1. An actuarial analysis indicates that the expected losses for the whole year are 120, while the aggregate deductible is 100. The original premium paid for the contract is 20. What is the appropriate loss reserve at December 31?

Glenn Meyers pointed out that the expected losses on this contract are not 20. While 120 may be the best estimate of the aggregate losses, if we assume that there is some possibility losses could be less than 100 in some scenarios, then the expected losses excess of the deductible are more than 20.

Christopher Diamantoukos notes that this phenomenon occurs, not just on excess aggregate policies, but on any excess policy. The expected losses in excess of an attachment point are not, in general, equal to the expected losses less the attachment point.

I suspect that this issue is not adequately addressed in many reserving analyses. Nevertheless, this was not the main point Ruy Cardoso intended to address. So let us suppose that we can restate the problem such that the expected losses in excess of the deductible are 20. Now how do we establish the year-end reserves? **Michael R. Lamb** notes that when many of us first learned reserving we were taught to pretend that the policy is canceled at year-end and then examine the earned premium and the associated losses. This works well with policies covering individual claims but falls down with aggregate coverage. In fact, the entire concept of canceling an aggregate cover policy raises some interesting issues.

In particular, if a policy actually is terminated mid-term, how are losses determined? Some argued that policies do not typically carry language prorating the attachment point. **Alan E. Wickman**, a regulator, noted that he had rejected contracts that did not provide for pro-rata in the case of cancellation by the insurer. However, the calculations done by Glenn Meyers strongly suggest that proportional pro-rata is not the actuarially fair answer.

Other respondents tackled the difficult question of how to earn the premium under this contract. We are so used to uniform earning patterns that we sometimes forget that some policies have earning patterns distinctly different from a uniform pattern. One notable example is extended warranty coverage for new cars, where failure to appreciate the appropriate earning pattern has literally led to insolvency. Note that in some of these situations, the true loss reserve may be negligible, while the unearned premium reserve and the possible deficiency in the unearned premium reserve may well be the important balance sheet items. It isn't clear to me how to establish an appropriate earning pattern for aggregate excess coverage. It seems likely that such a pattern would be weighted toward the end of the contract, but a revised earnings pattern would not address the liabilities if no premium deficiency reserve is established. Bjorn

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Dividing the Rashers

by John P. Robertson

The following is from Oswald Jacoby and William Benson, Intriguing Mathematical Problems, Dover 1996.

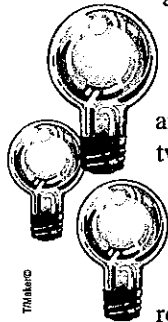
At Harmony House it is Mrs. Crabbe's custom to set up a platter of breakfast bacon so that her lodgers may help themselves as they come down in the morning. On this particular morning, had all [five] lodgers shared alike, there would have been a whole number of rashers each, but the Oldest Boarder, who came down last, found only half a rasher left for him. Jones always takes one rasher; Robinson takes his fair share of what remains; Brown is greedy, takes his fair share [of what remains] and then half a rasher extra; Wag likes three rashers, but, being superstitious, always leaves at least one for those who follow him.

How many rashers did Wag take?

Light Bulbs

The problem was to determine which of three switches controls which of three light bulbs in another room. You know that the up position of each switch turns its light on, and the down

position turns the light off. You want to make your determination without going back and forth between the rooms. **Mary Corbett** sent in a solution that was the most popular among solvers. Namely, put two of the switches up, and one down. Wait a few minutes, and put down one of the two that are up.



Move quickly to the other room. The light that is on is controlled by the switch that is up. For the two lights that are off, the cooler one is controlled by the switch originally down, and the warmer one is controlled by the switch that was up for awhile.

For the extra credit problem, one did not know whether the up position for a switch turned the light on or off. **Bob Hallstrom's** solution is to do the same as the above. If one light is on, then the up position turns the light on, and the above solution applies. If two lights are on, then the down position turns the light on. The light that is off is controlled by the switch that is up. Of the two that are on, the cooler one is controlled by the switch changed from up to down last.

Solutions to the main problem were submitted by Gary Colton, **Dale Evans**, Bill Leslie, Eric Ruud, **Bob Spitzer**, and Desmond Sutherland. Both Mary Corbett and Bob Hallstrom submitted solutions to both parts, as did **Richard Amundson**, Jennifer Capute, **Greg Cuzzi**, D. A. Elia, **Tim Hansen**, **Joe Kilroy**, **Tom Kozik**, **Thomas Lee**, **Philip Lew**, **Oleg Movchan**, **Barry Savage**, **Jim Shoenfelt**, **Mike Singer**, **Russell Wenitsky**, and **Jim Wickwire**.

Number Theory Problems

One of **Gary Venter's** problems was to investigate the possible lengths of sequences of consecutive integers each of which can be written as a prod-

uct of two-digit numbers. **Tom Struppeck** observes that the maximum length of such a sequence is no more than 100 for the very simple reason that every 101^{st} integer is divisible by 101. Since a sequence of length 8 is known, the maximum length of such a sequence is at least 8 and no more than 100. Can anyone narrow this down further?

A related question is whether the number of pairs of consecutive integers such that each can be written as a product of two-digit numbers is finite or infinite. This leads quickly to connections to the ABC-conjecture, which is considered just as intractable as Fermat's Last Theorem was a few years ago.■

Brainstorms

From page 15

Palmgren of the Financial Supervisory Authority of Sweden noted that he would establish a premium reserve, comprising both an unearned premium reserve and a provision for unexpected risks. **Michael Lamb** specifically suggested that we "should also include premium reserves and rate adequacy in the scope of the actuarial opinion."

After this column was written and sent to the CAS Office, I received the Academy's *Property and Casualty Practice Note on Actuarial Opinions*. On page two, it notes that the scope of the *Opinion* in 1998 will be expanded to include the reasonableness of unearned premium reserves for contracts of greater than thirteen months duration. Sounds like this issue is already getting a response.

As a member of the Committee of Online Services, I am heartened to see the CASNET used for such a spirited discussion. For those who would like to receive or contribute to this arena, please contact Mike Boa by e-mail at mboa@casact.org.■

In Memoriam

Gilbert W. Fitzhugh

(FCAS 1935)
January 1998

Dave R. Holmes

(ACAS 1997)
October 10, 1997

George C. Munterich

(FCAS 1950)
January 1998

William Newell

(ACAS 1916)
date of death unknown