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From the President

by Robert A. Anker

The early responses to my recent letter to CAS members have been universally thoughtful and generally very supportive. I have received letters, notes, E-mails and voice mails and have monitored at least some of the responses on CASNET. Without question, everyone recognizes that the letter is an unusual event. It is also clear that additional background would be helpful.

Robert A. Anker

There are three related, but individual events that triggered the letters to Dave Holland, president of the Society of Actuaries, and to our membership. The first event was the development of the *North American Actuarial Journal* itself. As discussed in the membership letter, the SOA was very forthright in presenting to us the idea of the *Journal*, the invitation for us to join in sponsoring it and the manner in which they would proceed. We were comfortable with our choice not to sponsor, given the assurances we received on the approach the *Journal* would take. This is not to say that we were pleased with the decision of the SOA to include property/casualty topics in the *Journal*.

The second event was the development of a solicitation brochure for authors for the *Journal*. The brochure is explicit in its solicitation of

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Cassandra of the CAS

(Editors' Note: This is a letter that was originally submitted to the CAS Board of Directors. Cassandra was a daughter of Priam endowed with the gift of prophecy, but fated never to be believed. Merriam Webster's Collegiate Dictonary, 10th edition.)

Dear Fellow Directors:

Sholom Feldblum

We have been quiet, placidly reacting to the SOA advances, and timidly burying our heads in the sand. Perhaps it is that we have no solution to propose; so we pretend that no solution need be proposed.

Recent years have been good to us. The Statement of Actuarial Opinion establishes the casualty actuary as arbiter of indicated reserves. The Appointed Actuary of the future, as envisioned by the American Academy of Actuaries, will have an even more important role, reporting on the financial strength of the company under a variety of future scenarios. The demand for casualty actuaries is strong.

In 1988, California passed Proposition 103, the "Full Employment for Actuaries Act." Company rate filings now come in cardboard boxes with complete descriptions of internal rates of return, capital allocation, and risk-adjusted cash flow models. Casualty actuaries are needed to file, analyze and judge. Demand grows ever stronger.

How different it is across the fence! Twenty years ago, it was thought that ERISA would establish the primacy of the pension actuary. Diskettes and spreadsheets have proved cheaper, faster and more accurate. Pension actuaries are happy to hold onto the jobs that remain.

Life actuaries speak of expanding into investments, banking and other financial risks. What they mean is that the life insurance industry has matured, mortality tables rarely need revision and computers handle most pricing work. Demand for life actuaries is weak.

Individuals are ever polite, but economics rules institutions. The SOA disclaims any intention of co-opting casualty actuarial science under its wings. But casualty actuarial science

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Inside This Issue:

Editorial

How to Catch a Wild Hog

by C.K. Stan Khury

A trapper, who became disenchanted with the messiness and cruelty of the usual trapping methods, found an ingenious way for catching wild hogs. He located an area in which wild hogs were known to roam, put out a few bushels of corn, and stood back about 50 feet to watch. The hogs spotted the corn and for a few days simply looked at it, sniffed and snorted suspiciously, eyed the trapper standing some distance away, and kept their distance from the corn. On occasion during this period of discovery, a young hog would charge out and snatch an ear of corn and race back for cover. After a few days, some of the older hogs figured out that if it was safe for the young ones to eat the corn (and wild hogs are very protective of their young) then it must be safe for them too. And they began to do likewise. The trapper kept refreshing the corn supply and the hogs were enjoying it immensely.

A few weeks later the trapper showed up with fence posts and wire. He piled up the posts and wire within the line of sight of the hogs. The hogs kept on showing up for their daily ration of corn—and in the process they got used not only to the sight of the trapper moving about, but also to the sight of fence posts and wire. A few days later the trapper began to put up a few posts and worked right within the sight of the hogs. The hogs grumbled a bit but eventually ignored the activity of the trapper, because their food supply was not affected at all. The trapper continued this way until a substantial fence was built, complete with a rather wide gate that the trapper kept open. The hogs would come in through the open gate, eat the corn and leave. The number of hogs coming to the regular feast increased daily. One day, when all the hogs were busy enjoying the corn, the trapper walked up to the gate and closed it.

Until the trapper closed the gate, the wild hogs were free—and if they only had eyes to see and minds to perceive, they would have simply stopped being engaged by the trapper.

During the past two years there have been a number of interesting developments at the Society of Actuaries (SOA) that brought this story to mind. In this column we will focus on just two of them: the establishment of the *North American Actuarial Journal (NAAJ)* and the establishment of the SOA Foundation (SOAF). The *NAAJ*, a replacement publication for the *Transactions* (the SOA equivalent to our *Proceedings*), unabashedly announced that its scope will include property and casualty topics. The CAS board of directors declined an invitation to co-sponsor the *NAAJ*, seeing no reason to co-sponsor a publication that would compete directly with its own *Proceedings*. As a matter of fact this publishing activity engages the SOA in a subject matter in which it has no competence. If it were possible for an actuarial organization to be accused of professional misconduct, we believe one could reasonably argue that the SOA should be so charged—as it intends to practice in an area in which it has **no qualification, training, or experience.** It will be interesting to watch and see what kinds of articles the *NAAJ* generates in the p&c area. And, one more thing, just exactly why did the SOA broaden the scope of its *Transactions* to include property/casualty topics in the first place?

The SOAF, on the other hand, was simply formed two years ago without any consultation with the CAS. In addition to research, the SOAF has as one of its aims interfacing with the public which, in a way, takes it into the territory of the American Academy of Actuaries (a different kind of fence for a different prey). After it was created, the SOAF became interested in discussing the possibilities of a merger with the Actuarial Education and Research Foundation (AERF). For those who may not be aware, the CAS has been one of the principal sponsors of AERF since its founding. The CAS has been actively discussing ways in which

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An FCAS Reaches his 75th Anniversary

ARLINGTON HEIGHTS, Ill.—He is now 95 years old and lives with his wife of 70 years, Robina (Ina), in a nursing home in Illinois. But 75 years ago **Clarence S. Coates** joined the fledgling CAS as a Fellow.

It all started in 1921, when Coates became an Associate. The following year he passed Parts 1 and 2 of the Fellowship exam and was named a Fellow of the Society. He was one of three new Fellows in 1922, boosting the total number of Fellows in the Society to 158. With 66 Associates, the membership stood at 224 that year.

When he became a FCAS, Coates was employed by Western States Life Insurance Company, in San Francisco, Calif., as an actuary. His brother **Barrett N. Coates** (FCAS 1918, FSA 1921) was also employed by Western States at the same time as assistant secretary and actuary.

The Coates family produced several more actuaries—Clarence's son, **William D. Coates** (ACAS 1955); Barrett's son, Barrett N. Coates Jr. (FSA 1951); and Barrett Jr.'s son, John K. Coates (ASA 1984). As an aside, Coates and Herfurth, the consulting firm founded by Clarence's brother, went through a series of name changes and was eventually acquired by Buck Consultants, Inc. John Coates continues to work there.

Coates' contributions to the Society included a discussion of Thomas Tarbell's paper, "Casualty Insurance Accounting and the Annual Statement Blank," in the 1941-1942 *Proceedings*.

Coates' early career was centered in San Francisco where he worked for several companies including Federal Mutual Liability Insurance Company, Federal California Underwriters, and Lumbermen's Mutual Casualty Company (now Kemper Insurance Companies). In 1939 Coates moved to the Chicago, Illinois, office of Lumbermen's Mutual and was promoted from statistician to assistant secretary. He was promoted in 1948 to third vice president then second vice president in 1958, and again to actuary in 1960. Coates retired in 1966. A fellow Lumbermen's Mutual employee, **Earl F. Petz** (FCAS 1952), remembers an incident that illustrated Coates' attitude toward work. "When it was time for him to retire I believe his last day was a Friday and the normal routine was if you made it to lunch, then you went home. Not Clarence. He worked until it was quitting time and came in on Saturday to clean out his office. He was that conscientious," Petz related.

Petz continued, "His approach to being the boss was more the case of setting a great example and inspiring people to work instead of being a hard driver that cracked the whip. You wanted to do the job for him and do it right because he was like that." Coates was also reported to have been a regular player in the daily bridge game at lunch time at Lumbermen's Mutual.

Another co-worker, **M. Stanley Hughey** (FCAS 1947) worked with Coates at Lumbermen's Mutual. "He had been there a number of years at that point," Hughey reported. "He was always a very easy-to-deal-with type of guy. But he was a stickler for details. When you took reports in to him and he cleared them, they were right, or else!"

Both Coates and Hughey resided with their families in Wilmette, Illinois. Hughey remarked about the personal side of Coates, "He was quite a tennis player in his earlier days until his eyes failed him." In Wilmette, Coates contributed to many community activities including serving on the board of a local hospice.

David G. Hartman (FCAS 1972), now senior vice president and chief actuary at Chubb Group of Insurance Companies, remembers Coates from when Hartman was a "lowly summer employee" at Kemper. "The word 'crusty' comes to mind," Hartman recalled, "and a ready smile. I also remember his cigars. There were many of them every day."

According to William Coates, the elder Coates encouraged his son to

Clarence S. Coates

become an actuary at a critical time in his life, "I didn't have any idea what I wanted to be, he said. "I had started in architecture and didn't like that. I was planning to join the army during the Korean War but my folks persuaded me to stay in school."

Father and son worked together only briefly. "It was when I was working a summer job while I was in school," Coates explained. "We decided early on that we didn't want to work together. I felt I would be unable to reach my potential working under my dad and he felt he would have to treat me more fairly than otherwise because I was his son." William Coates recently retired from Daniels-Head Insurance Agency in Hinsdale, Illinois, as president and owner.

During his career as an actuary, Coates saw the CAS grow to 421 members. In the 31 years since his retirement the membership in the CAS has swelled to 2,820. The tremendous growth of actuarial science since the early days of the Society has also caused the number of exams for Fellowship to increase to the current ten.

The CAS would like to thank Coates for his extraordinary membership in the Society and the legacy his family has left with a third generation of actuaries. ■

Upcoming Actuarial Celebrations

by Kendra M. Felisky-Watson

LONDON, England—Yes, Virginia, there are actuaries in the land of wallabies and kangaroos. In fact, the Australian Institute of Actuaries is celebrating its 100th birthday this summer.

In honour of this occasion, the next ASTIN and AFIR meetings will be held in conjunction with the birthday celebration. The relevant dates are ASTIN August 10-13, AFIR August 13-15, and the Australian Institute's annual meeting August 17-20. The location is Cairns, Australia, which I am told will be lovely at that time of year.

Another date for your calendar: The International Congress of Actuaries will be holding its quadrennial meeting in Birmingham, England June 7-12, 1998. It's another birthday; the 150th anniversary for the Institute of Actuaries. While Birmingham is not really a very nice place to visit, the area around it is.

As usual, Lloyd's and the actuarial certification of reserves required by the US regulators is keeping many actuaries busy. Instead of allowing the reserves for the US Trust Funds of Lloyd's to be set based on UK insurance law, the New York regulators are requiring that the reserves be set based on New York insurance law. Needless to say, this has thrown UK actuaries into a tizzy.

A quite interesting meeting took place recently at the Institute of Actuaries when Dr. S. Coutts and Mr. T. Thomas presented their paper,

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CAS Continuing Education Calendar

May 18-21, 1997	1997 CAS Spring Meeting Marriott River Center, San Antonio, Texas
June 2-3, 1997	Seminar on Reinsurance Marriott's Castle Harbour Resort, Bermuda
June 29-July 1, 1997	Seminar on Principles of Finance (Limited Attendance) Hotel Sofitel, Chicago, Illinois
July 21-22, 1997	Seminar on Dynamic Financial Analysis Sheraton Hotel and Towers, Seattle, Washington
July 28-29, 1997	Practical Applications of Loss Distributions (Limited Attendance) Dallas, Texas
August (TBD)	Seminar on Reinsurance (Limited Attendance) Marriott East Side, New York, New York

Random Sampler

The Actuary as Expert Witness

by Charles L. McClenahan

At some point in their careers, many actuaries will be presented with the opportunity/obligation to present testimony as an expert witness. This testimony might be in court, in a deposition or as part of a regulatory hearing. Actuarial Standard of Practice No. 17 *Expert Testimony by Actuaries* provides essential guidance which, if followed, will help to assure that the testifying actuary will maintain his or her professionalism. What follows is some additional advice that may help the actuary to maintain the illusion that he or she actually possesses some expertise.

The advice I offer is basically this:

- Know your limits;
- Control your counsel;
- Don't pontificate, educate;
- Know the details (but keep them in reserve); and
- Don't get cute!

The first piece of advice—know your limits—refers to the area of your expertise. While it is unlikely that you will wander beyond those subjects in which you have been trained and with which you feel comfortable, under cross-examination you may be asked to extend your opinions in an attempt to make you look silly. For example: "Well, Actuary, you have testified that it is your opinion that the probability that the reserves are within 5 percent of adequacy is greater than 90 percent. Is it greater than 91 percent?" Give either a "yes" or a "no" to this question and you're trapped. Unless you have performed alternative calculations, the proper answer is that you haven't evaluated the reserves at that level of significance.

Controlling your counsel is possibly the greatest challenge in expert testimony. If you have helped to prepare the questions to be put to you on direct examination, make certain your attorney knows to ask them precisely the way they were written. Many lawyers don't like to read questions from a list, and in attempting to appear informal, turn elegantly crafted questions into garbled technospeak. When you get an unintelligible question, don't attempt to "fix" it with a good answer. Simply asked that the question be rephrased.

Pontification is the actuarial expert's worst enemy. In most cases, the only other mathematician in the room is the other side's expert. Everyone else, judge, jury, counsel, and other witnesses will likely be either intimidated by mathematics or suspicious of statistics. If you present yourself as an actuarial oracle who is there to hand down the numerical wisdom of the ages, you will impress no one but yourself. If, however, you can assist the judge and jury (or the hearing officer or commissioner) in a non-technical way to understand the basis for your opinion, you will be perceived as being helpful as well as wise.

Controlling your counsel is possibly the greatest challenge in expert testimony.

The Greek philosopher Heraclitus said, "Men who wish to know about the world must learn about it in its particular details." Before giving expert testimony make certain that you know the source of every number and the rationale for every assumption that went into your opinion. If possible, you should have the same level of knowledge regarding the opinion of any other actuarial expert who presents testimony. But don't use the details unless they are needed—usually on cross-examination.

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San Antonio Riverwalk Restaurants

(Within walking distance of the Marriott Rivercenter Hotel, site of the 1997 CAS Spring Meeting.)

$ under $10 $$$ $10–$20
$$ $7–$15 $$$$ $20 and up

AMERICAN SOUTHWEST
Boudro's $$$
421 E. Commerce/on the Riverwalk
210/224-8484
Casual. Reservations required.

BARBEQUE
Dick's Last Resort $$
406 Navarro/on the Riverwalk
210/224-0026
Very casual. No reservations required. Live Jazz Nightly

CONTINENTAL
Fig Tree $$$$
On the Riverwalk at La Villita
210/224-1976
Dressy. Reservations required.

ITALIAN
Paesano's $$$
111 W. Crockett/on the Riverwalk
210/227-2782
Casual. No reservations required.

MEDITERRANEAN
Presido $$
245 E. Commerce
210/472-2265
Nice Casual. Live music Thursday-Saturday.

MEXICAN
Rio Rio Cantina $-½
By the Commerce St. Bridge/on the Riverwalk
210/226-8462
Casual. No reservations required.

SEAFOOD
The Bayous $$
College Street/on the Riverwalk
210/223-6403.
Casual. No reservations required.

Quarterly Review

Introduction to Investment Strategy

Review of *Active Portfolio Management* by Richard C. Grinold and Ronald N. Kahn (Probus Publishing Company, 1995, $65).

by Robert J. Finger

It is likely that investments will become a much more important field for the casualty actuary in the future. Dynamic Financial Analysis may become almost as important as reserving and ratemaking to practicing actuaries. Life and pension actuaries receive more training in investments than casualty actuaries. In addition, there has been consolidation within the financial services sector, which is likely to continue. A better understanding of investment practices and principles will be useful to the casualty actuary in at least two ways: in understanding the asset side of the balance sheet and in understanding how property/casualty operations are viewed by the owners.

I believe *Active Portfolio Management* provides an excellent overview of current investment theory and practice. It has an appropriately mathematical perspective (including extensive technical appendices) and it describes a broad range of theories and practices in clear terms. It focuses on stock investments (which may not be as relevant to property/casualty companies), but it provides a process that is applicable to all types of investments, including bonds, derivatives and currencies. After reading the book, one should have a better idea of how to manage investment advisors and what one can consider a realistic level of investment performance.

The book is written from the perspective of a manager of institutional assets. The manager has been given a certain amount of assets and is charged with investing it in a certain asset class (for example, domestic large capitalization stocks). The manager's performance will be judged against a benchmark such as the Standard & Poor's 500 Index. The basic theme of the book is that the manager can only do better than the benchmark if he/she has better information regarding the expected returns of individual investments within the asset class. If the manager's estimates are the same as the market's consensus estimates of expected returns, the manager should invest in the benchmark. If the manager's estimates are at least a little bit better than the consensus estimates, the manager can add value to the investment decision by overweighting the investments where he/she expects higher than consensus returns. Of course, this added value can be dissipated by inefficient portfolio construction and transaction costs.

A great deal of research has questioned whether the capital markets are efficient and if any given investment advisor actually can beat the market. This book takes the position that it is possible, but difficult, to beat the market. It develops concepts and tools to deal with this issue. It does not provide the answer because yesterday's answer is unlikely to be today's or tomorrow's answers.

Perhaps the most important concept is the "Fundamental Law of Active Management." This law states that the value added by a strategy will be proportional to the "information ratio" squared. The information ratio is the product of the "information coefficient" and the square root of the strategy's "breadth." The information coefficient is a measure of the manager's skill (at making better asset value forecasts than the market's consensus estimates). The breadth is the number of independent forecasts (per year). If the information coefficient is zero, the manager adds no value and should invest in the benchmark. Breadth will be

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"Modelling the Impact of Reinsurance on Financial Strength." The authors postulated that the Daykin *et al.* asset/liability model could be used to specifically examine the effects of different reinsurance programs on the capital of a direct insurance company. Coutts and Taylor presented a modular model structure in which you can either use the authors' module or construct one more appropriate to your company's situation. It seemed to me that this is all very similar to the Dynamic Financial Analysis that the CAS has been studying for years.

What was really fun was the discussion that took place. Some reviewers liked the paper and thanked the authors for their innovative contribution to actuarial science. Other reviewers found the tone of the paper to be "self-congratulatory" and accused the authors of wasting peoples' time with a marketing brochure (the authors are a consultant and a reinsurance broker). The authors will be presenting their paper to the CAS at an upcoming meeting where I think they will have a much more sedate reception.

As part of its long heritage the Institute of Actuaries is housed in one of the oldest buildings in London, the Staple Inn. The Staple Inn is a lovely old half-timbered (black and white) building around a central cobblestone courtyard. It was the only building in its area to survive bombing during the war. All the general administrative workings of the Institute are housed in the Staple Inn but the library has been moved to Oxford.

The Institute has meetings about six times a year when papers are presented and discussed. If the meeting is on a boring subject, I entertain myself by staring at the lovely carved ceiling and beams, the heraldic emblems on the walls, the intricate panelling or the stained glass windows. Usually, one meeting a year is on a general insurance topic and then I tend to pay attention. After the meetings, the attendees move on to one of

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Register Now for 1998 International Congress

LONDON, ENGLAND—The 1998 International Congress of Actuaries, sponsored by the Institute of Actuaries and the Faculty of Actuaries, will be held June 7-12, 1998 in Birmingham, England.

The congress will feature seven general sessions and 40 concurrent sessions on a variety of professional, practical, commercial, and academic topics. More than 200 authors from around the world are preparing materials (papers, reports, PC demonstrations, and poster displays) for their presentations.

Social events and a variety of interesting sightseeing tours are also part of the event. For registration information, contact: Congress Secretariat, CASIL, 4 Cavendish Square, London, W1M 0BX, England; Fax: 011-44-171-629-3233. ■

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the 18 dining societies, or the pub. These dining societies are members-only and some are real stodgy "pass-the-port-on-the-left" gatherings. The oldest dining society was founded in 1848. In fact, many people miss the meetings and just go to their dining society! At most dining societies after-dinner speeches are given, traditionally on non-actuarial subjects and they are preferably light-hearted and edifying. A friend of mine recently spoke at one about feminism, American line dancing and boring actuarial neckwear. ■

Brainstorms

Is That Ewe, Dolly?

by Stephen W. Philbrick

As I sit here typing these words, it is only a few days after the announcement that Scottish scientists have successfully cloned an adult sheep. By the time these words are read, will it be yesterday's news, a *factlet* whose only use will be to stump one's opponent in a future trivia game? Or will it still be one of the more important news events of the century?

Why on earth is this subject relevant to actuaries?

I will go out on a limb and predict that this event will deserve a place in history books. In the short run, comedians will have a field day with the serendipitous juxtaposition of Scots, sheep and cloning. The second question is harder to answer from the narrow vantage point of a property/casualty actuary, but if we think of ourselves as members of the broad actuarial community, several interesting issues arise. The broad ethical questions overwhelm the actuarial issues, but perhaps the actuarial profession can use its expertise to supplement the debates.

The most obvious actuarial questions relate to life and annuity questions. Presumably, we will know more about the life expectancy of a clone than we know about an individual chosen at random. This knowledge will increase in subsequent generations, assuming a large number of first generation clones, with enough data points to calculate individual-specific mortality tables. The use of credibility theory and experience rating as normally practiced by casualty actuaries is not commonly found in individual life questions, but these techniques could become much more applicable. Thus, one ramification of widespread cloning is the need to transfer casualty actuarial applications to life and health questions.

One of the more obvious concerns of widespread cloning is the potential for reduction of biological diversity. While clearly we will not, for example, decide to select a single pig and create the entire porcine population from that

Thus, one ramification of widespread cloning is the need to transfer casualty actuarial applications to life and health questions.

single member, legitimate questions may be asked about the breadth of diversity needed. Are 10,000 unique pigs sufficient to eliminate concerns about a transformed virus wiping out the species? Do we need 1,000,000 different versions? More? It seems likely that the answer to this question could be addressed with a sophisticated model of the genetic process, in order to balance the need for diversity against the desire to clone specific animals with particular attributes. While actuaries are not the only professionals with experience in mathematical modeling of this type, clearly the training of actuaries provides a background helpful to either developing such models, or providing an intelligent critique of models developed by others.

Those interested in more details can read several well-written articles in *Slate*, the on-line magazine, which is located at **www.Slate.com.** A list of potential applications of cloning, with commentary, is located at **http://www.slate.com/WeekClones/97-03-01/WeekClones.asp.** An article

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Boston Ratemaking Seminar Covers Much Ground

BOSTON, Mass.—The impact of computer modeling and managed care on ratemaking were among topics discussed at the CAS Ratemaking Seminar in Boston, which attracted nearly 800 attendees.

CAS members made up 45 percent of the total 782 attendees. CAS exam candidates totalled 279 in all. International actuaries also had a presence at the meeting: 36 from Canada, nine from England, three from Switzerland, two from Bermuda, and one each from Australia, Ireland, and Mexico.

Panelists explained that computer modeling to develop rates for hurricanes is a more precise method than traditional ways of estimating loss costs.

Michael A. Walters, Tillinghast - Towers Perrin, said, "We now have 120 years of hurricane frequency data which, in combination with scientific and engineering data, makes modeling for severity and frequency a most credible method."

According to **Philip A. Baum,** Nationwide Insurance Co., coastal property exposure grew by 178 percent from 1980 to 1993 and 65 percent from 1988 to 1993. "Modeling uses current exposures and prevailing coverage/policy conditions and also reflects building code, material and design codes change over time," he said.

The market for the securitization of catastrophe risks will continue to evolve as participants gain experience through trial and error, said Ray Dowling, Integrated Reinsurance Risk Management. He said that in the future, ceding companies will utilize integrated catastrophe management programs composed of reinsurance, securitization and the use of contingent equity/liquidity to manage their catastrophe portfolio.

Joseph R. Lebens, Tillinghast - Towers Perrin, pointed out that "historical results are unreliable to use in evaluating the spectrum of outcomes" from a natural catastrophe for a number of reasons, such as the infrequency of actual events and insufficient record keeping.

"Catastrophe model output is ideal for use in financial models used to evaluate securitization contracts, because it determines aggregate insured losses for wide spectrum of events, assigns a likelihood and applies frequency distribution to estimate annual aggregate insured loss amounts," he said.

"Risk management approaches should address the possibility of negligent providers, improperly credentialled providers, and physicians excluded from the network."—James D. Hurley

Attendees were also told that standard ratemaking analysis will not be sufficient when dealing with the ever-evolving industry of healthcare delivery.

James W. Macdonald, CNA HealthPro, said, "Physicians, HMOs, hospitals and insurers are all vying to be the first in the 'health care food chain' to receive the patient's dollar."

James D. Hurley, Tillinghast - Towers Perrin, said that there are many different kinds of managed care organizations that have created a shift in liability exposure. "Risk management approaches should address the possibility of negligent providers, improperly credentialled providers, and physicians excluded from the network," he added.

Michael G. Kerner, Zurich-American Specialties, said, "A conflict between a patient and a provider causes an unhappy customer, which may increase the frequency of claims."

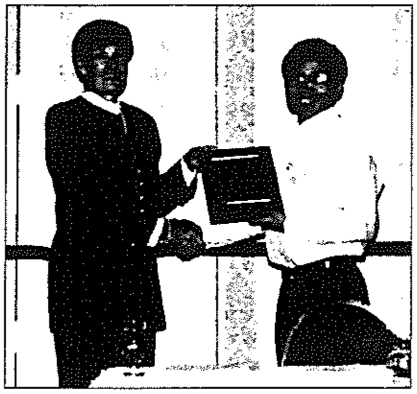
While the characteristics of managed care programs in the workers compensation system differ, they share a number of common elements, according to **Brian Z. Brown,** Milliman & Robertson, Inc. These elements include medical fee discounts, capitation fees, utilization reviews, employer involvement, the use of case managers and a strong return to work component.

Major factors for actuaries to consider are direct savings in medical costs and indemnity benefits as well as the impact of state regulation on choice of provider and fee schedules, according to **Nancy R. Treitel,** Liberty Mutual Group.

Richard P. Yocius, Allstate Insurance Co., said that for auto insurers managed care offers the potential for "reductions of unnecessary treatment, reductions in the per unit costs of necessary treatment, an assurance of quality medical care, fraud reduction and, in no-fault states, a diminished incentive to increase medical costs in order to pierce a monetary threshold."

Gregory S. Girard, State Farm Mutual Automobile Insurance Co., said that prior to the implementation of managed care programs in a given state, actuaries must secure data on the distribution of claims by type of loss, provider, type of treatment and statistics on managed care vendors. After implementation, actuaries should conduct closed claim studies and review data with special care to avoid bias due to insufficient distribution. ■

Ratemaking Prize Awarded



Dr. Shaun Wang, Ph.D.., accepts the Ratemaking Call Paper Award from CAS President-Elect Mavis Walters

BOSTON, Mass.—The winner of the 1997 Ratemaking Call Paper Program Prize is a professor at the University of Waterloo, Waterloo, Ontario, Canada. Shaun S. Wang, Ph.D., received a $1,000 check and a plaque at an award ceremony during the CAS Ratemaking Seminar here March 13-14.

Dr. Wang's paper, "Implementation of PH-Transforms in Ratemaking" was one of four papers from the Committee on Ratemaking's call for papers presented during the Ratemaking Seminar. The CAS *Forum* Winter 1997 edition contains all the 1997 Ratemaking call papers.

An anonymous panel of actuaries reviewed the papers. The criteria used in the selection of the prize paper included: originality of ideas, thoroughness, understanding of complex concepts, and contribution to actuarial literature, said **Nancy Braithwaite,** call paper program coordinator.

Reinsurance actuaries have shown interest in the topic of PH-transforms, Wang reported. After he presented his paper at the Ratemaking Seminar, "I had some interactions with reinsurance actuaries who told me they are testing my PH-transform formula in their companies," Wang said. "I had also heard that Swiss Re has been using something similar as a pragmatic method without the theoretical concepts I presented." ■

Two Papers Share Management Data Call Paper Award

BOSTON, Mass.—The CAS recognized the winners of its first data management/data quality call paper program at the recent CAS Ratemaking Seminar here. The top prize of $1,000 was split between the authors of two papers. The authors presented their prize-winning papers during workshops at the Ratemaking Seminar. The papers were also printed in the 1997 CAS *Discussion Paper Program* book.

The author of the first winning paper, "Insurance Geographics," is William M. Raichle, Ph.D., Insurance Services Office, Inc., New York, NY. Although insurers are interested in analyzing geographic data as part of their decision making process, developing and maintaining a comprehensive geographic information system can be expensive and time-consuming. Raichle's paper describes the technology available to property/casualty insurers and how insurance geographics can be incorporated into ratemaking, underwriting, and marketing operations.

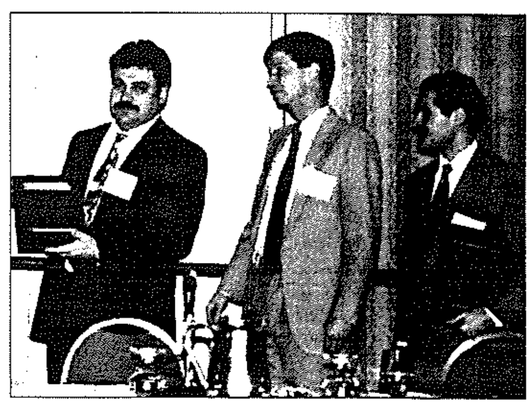
The second paper, "Synchronizing Data Management Technologies to Integrate Actuarial Processes," has three authors: Omar D. Kouatly, **Mark W. Littmann**, and Aleksey S. Popelyukhin, Ph.D., all of Price Waterhouse LLP, in Hartford, Conn. "We were thrilled to be acknowledged," Littmann said. For the past six years, Littmann explained, Price Waterhouse actuaries and software developers have worked as a team to create a system designed to solve data management challenges facing actuaries.

Their paper, Littmann said, "is very practical. The first chapter analyzes the actuarial process and the technology available, then provides a blueprint of an ideal system. The second chapter provides real life examples of how you can solve actuarial problems with such a system."

The CAS Data Management Information Committee sponsored the call paper program in conjunction with the Insurance Data Management Association (IDMA). The goal of the program is to develop a source of data management literature for casualty actuaries. **Arthur R. Cadorine,** committee chairman, explained, "In all the *Proceedings* and *Forums* there aren't any papers on management data or data quality. With the call paper program, we wanted to attract some new educational material on those subjects."

An anonymous committee reviewed the papers and selected the winning papers on the basis of their originality of ideas, understanding of complex concepts, contribution to literature, and thoroughness of ideas expressed. ■

CAS President-Elect Mavis Walters shakes hands with William M. Raichle, Ph.D. Raichle's paper "Insurance Geographics" shared the first Management Data Call Paper Award.



The three authors of the second paper to share the Management Data Call Paper Award stand to be recognized during the presentation ceremony at the 1997 CAS Ratemaking Seminar in Boston, Mass. The winning authors are (from left) Omar D. Kouatly, Mark W. Littmann, and Aleksey S. Popelyukhin, Ph.D.

Is NCCI Price Gouging?

Dear Editor:

I recently requested four rate filings from the NCCI (National Council on Compensation Insurance) for the states of Georgia, Florida, Alabama and Mississippi. I was shocked to learn that the total cost for the filings would be $957,557. Of course I could have gotten a copy from the insurance department, but that would be in copyright violation. Besides, some states, e.g., South Carolina, now allow NCCI to withhold actuarial content.

Pricing and copyright protection were non-issues for over 70 years of NCCI's existence. With the exception of a few independent states, NCCI is the P&C insurance industry arm of concerted ratemaking for workers compensation. Sanctioned at both the state and federal level, NCCI has been the state custodian of workers compensation data. Although created by the insurance companies at the behest of the individual states to supply needed ratemaking detail for the purpose of regulating rate adequacy, NCCI now claims proprietary interest in its work based on "intellectual property" rights. It appears the states really goofed here.

The explanation I ultimately received from the business experts at the NCCI was something to the effect that my company is expected to bear the full costs of the NCCI data collection and ratemaking systems in each state as if I were the largest insurer in each state. Say what? Why can't I just pay a reasonable price? Apparently NCCI needs revenue to retool its infrastructure now that it's assessment base has shrunk with the great success of self-insurance.

Who owns the workers compensation data is not spelled out in the law. But NCCI controls the data and denies public access through outrageous pricing and licensing restrictions. NCCI is calling the actuarial rate development its intellectual property when, in fact, the workers compensation ratemaking procedures have been developed and published by the general actuarial community over the last forty years or more, and despite the fact that a federal court in Florida recently ruled that these data and procedures are not proprietary.

It is incumbent for actuarial professionals to be able to reference industry data in order to comply with actuarial standards for loss reserving and ratemaking purposes. This is, in fact, one of the primary reasons for the existence of statistical agencies under the exemptions allowed by the McCarran-Ferguson Act.

Join me in making a strong and clear case against these NCCI practices which potentially threaten the integrity of all our actuarial analyses in workers compensation.

Will Peacock

By Another Name

Dear Editor:

I would like to add my thoughts on the renaming of "incurred" losses as proposed by Hank Youngerman, FCAS. I agree that we should begin with *reported losses,* but then we should develop them to *ultimate losses* with the difference being IBNR.

There is an additional problem for rating organizations that use, as one of their methodologies, incurred losses (including IBNR) development (i.e., developing losses that were already developed by member insurance companies). In this case, you can begin with *"Company ultimate losses"* and develop them to *"Industry ultimate losses."*

Brian Turner

P.S. Who let Benjamin "Ben" Dover submit a letter to the editor? Next time you'll get letters from his sister Eileen Dover and her friend Jim Naysium!

More on Prop. 213

Dear Editor:

Regarding the article on California's Prop. 213 in the February *AR,* there is another flaw in the Department's calculation besides the one Gary Dean pointed out. The calculation considers only drivers; but BI claimants can also be passengers, bicyclists, etc. Obviously there is no requirement for passengers or pedestrians to have auto insurance, so Prop. 213 has no effect on these claimant's right to sue for pain and suffering. According to IRC's claim study, 61 percent of BI claimants countrywide were drivers of autos or motorcycles. If we use this figure Dean's estimated savings of 8.68 percent is reduced to 5.29 percent.

Doug Hoylman, FCAS

Correction

Dear Editor:

I just wanted to point out an error in Michael Walters' story "The Top 10 Actuarial Stories of 1996" that appeared on page 1 of the latest Actuarial Review. His No. 1 story is about the mergers of reinsurers. He then lists the following mergers: Swiss Re/American Re, Munich Re/National Re, Gen Re/Cologne Re and ACE/Tempest. Of the four mergers mentioned he missed on two of them. It should have been: Swiss Re/M&G Re, Munich Re/American Re, and I believe, Gen Re/National Re.

Karen Pehrson, FCAS

Ms. Pehrson is correct. The list of mergers should have read: Swiss Re/M&G Re, Munich Re/American Re, Gen Re/National Re/Cologne Re, and ACE/Tempest.

Responses to Bob Anker's Letter

Editors' Note: The AR *has obtained a number of letters and E-mails written to Bob Anker and the* AR *regarding Bob Anker's February 24, 1997, letter to members. Following are two responses. We intend to print more in the August 1997 issue.*

Dear Editor:

President Robert A. Anker sent a letter dated February 24, 1997, to the CAS membership regarding the *North American Actuarial Journal.* The letter reflects what I believe to be simple misunderstandings about the *NAAJ* and the actuaries who are responsible

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READERS

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for it. As the CAS member who serves on the SOA's Committee on Encouragement of Literature, it is appropriate for me to respond. These are, however, my personal remarks.

The *NAAJ* does not replace the Transactions of the Society of Actuaries, which still exits to publish technical refereed papers, but rather the *NAAJ* is a new journal designed to appeal to actuaries of all disciplines. The *NAAJ* does not exist to compete with the *Proceedings of the Casualty Actuarial Society* except in the limited sense that a paper of general interest to all actuaries might have been published in the *Proceedings* had the *NAAJ* never been created. Indeed, papers of interest to all actuaries have been published in the *Proceedings,* but with the result that they were readily available only to members of the CAS.

The Committee on Encouragement of Literature exists to stimulate submissions to all SOA publications. SOA President David Holland has asked us, as members of the SOA, not to solicit papers specifically from members of the CAS because of the concerns of the CAS Board of Directors that were expressed in Anker's letter. Nonetheless, all actuaries are permitted to submit articles of general interest to the *NAAJ.* Indeed, many members of the CAS are also members of the SOA, the Academy of Actuaries, the Canadian Institute of Actuaries, and the Conference of Actuaries in Public Practice, and a journal directed to all actuaries would serve its purpose poorly if it were to draw a line between the knowledge of value to actuaries and the knowledge that might be imparted by a member of the CAS.

The Board of Directors of the CAS decided not to support the work of the *NAAJ.* Anker's letter refers to "the long term desire of the CAS to retain independence and ... continued assurances for the SoA that they have no plans to 'take over' the CAS." There were perhaps other reasons, too. Still, actuarial science is changing and, as Shane Chalke has pointed out, there is only one science that the actuary of the future will practice. It seems likely that when all actuaries learn the same science, all actuaries will be members of the same professional organization. This onslaught of impartial science is as uncaring of the divisions that currently separate actuaries as the armies of Norway were uncaring for the court intrigue that drove the plot of *Hamlet.* Science will eventually wear the crown; it is for us, in the meantime, to carry out the business of being an actuary with whatever grace we can muster.

Oakley E. Van Slyke, FCAS, ASA, MAAA

Editors' Note: The fact that the NAAJ *is intended to replace the SOA's* Transactions *is confirmed in a February 25, 1997, letter from David Holland, president of the SOA, to CAS President Bob Anker, and we quote: "It was a difficult decision for us to* ***end*** *the* Transactions, *which had been our scholarly journal and flagship publication from the inception of the SOA." (emphasis added.)*

Dear Bob Anker:

Your letter voiced my concerns very well. I believe this journal [the *NAAJ*] goes well beyond the competition for authors. It almost feels like a war as to which organization voices the opinion of casualty actuaries. This journal only has the support of the SOA yet it seems to imply that it is the professional voice of "actuaries." The last time I looked, the SOA is a professional organization of non-casualty actuaries.

I have recently become involved with the Conference of Consulting Actuaries in meeting planning. In that case we are not usurping anyone. We are simply trying to give other voices a chance to be heard. In addition, we give consultants an opportunity to discuss their needs with other consultants. I believe there are positive opportunities with the CCA. Yet with the *Journal,* I do not see this positive approach to our difference with the SOA.

I called the SOA to voice my concerns. I also had a nice conversation with Tim Tinsley at the CAS. Again, thanks for voicing my concerns, too.

Howard Cohen

Non-Actuarial Pursuits of Casualty Actuaries

Around the World in 13 Months

by Brian D. Haney

For those of you contemplating your next vacation, this story may give you some food for thought.

The story begins in November 1995, when the actuary in question (AIQ) and her fiancee, a lawyer, set off for South America. Their itinerary was basically: enter Brazil at Rio de Janeiro and leave from Buenos Aires, Argentina, 10 weeks later. In between, the AIQ and her beau backpacked across much of South America, including a four-day trek on an ancient Incan trail.

The fun didn't end there, however. The AIQ and her husband-to-be then flew to Cape Town, South Africa, where they both picked up jobs in their respective professions. They worked there for five months, while making time for rock climbing and bungee jumping. In July 1996, they left their jobs, bought an old car and spent eight weeks driving around sub-Saharan Africa. In this sojourn they covered Namibia, Botswana, Zimbabwe, Swaziland, and Mozambique, including a four-day canoe trip down the Zambezi River.

From Cape Town, they traveled to India via Mauritius (the island just to the east of Madagascar). They spent three weeks in India, and after a brief jaunt to Oman, they proceeded to traverse Southeast Asia, hitting Thai-

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How DFA Can Help the Property/Casualty Industry, Part 2

by Susan T. Szkoda

Editors Note: This is the second in a series of articles on Dynamic Financial Analysis (DFA).

Part 1 of this series covered the definition of DFA, why it is important, and what the CAS is doing to further member education in this important area.

This article will focus on DFA as related to pricing.

Articles in the trade press (*National Underwriter* and *Best's Review*) have noted that, during 1996, rate levels deteriorated significantly as competition continued to heat up. Alan Greenspan's phrase "irrational exuberance" may be applicable to current and future property/casualty pricing activities.

It appears that liability and package rates have been soft for several years and that workers compensation rates softened significantly during 1996. Competitive pressures are likely to continue these trends for the next several years. This does not imply that *every* company's rates are inadequate. However, on *average*, it does imply that liability rates are inadequate and that workers compensation rates may soon be.

If you add to this mix the consideration that medical inflation rates may turn sharply upward over the next few years and that most companies can't cut expenses fast enough to offset stagnant or declining premium volumes, you have the fundamentals aligning to create a hostile operating environment.

This suggests that the commercial property/casualty industry is heading toward a 1984-style debacle. DFA can help avert a crisis.

In the "old days," when the cycle was three years up and three years down, management could simply hunker down and ride out the rough times. In today's environment, where the cycle seems to run roughly three years up and seven years down, that strategy doesn't seem prudent. Rating agencies probably aren't going to give many points for that approach. Points will be awarded to those companies who can not only survive, but thrive, in this challenging environment.

This is where actuaries can apply DFA to perform a valuable role.

There are (at least) five broad classes of pricing-related activities that can help the industry:

Trim the Sails—Now is the time to critically analyze the existing book of business. Have you taken on risks during good times that may not look as good when rates are lean? Rate and underwriting reviews geared toward identifying, fixing or shedding unprofitable (or likely to *become* unprofitable) lines, classes, geographical regions, or target market subsidiaries may be prudent. Development of specific strategies to maximize renewal retention of desirable business is also prudent.

Share the Risk—Programs that make rate credits more loss-sensitive and less automatic may also be prudent. Examples include greater use of retro rating, loss sensitive dividends and loss sensitive contingent commissions. Cost effective use of reinsurance may also be a key element of this strategy.

Identify Pockets of Opportunity in New Areas—Many of the largest and most successful insurers became so when they spotted opportunity in the "cast-offs" of the traditional insurance industry. Such opportunities still exist.

Another opportunity is to build a better, more desirable product within mainstream lines of business. When was the last time you asked your customers what features *they* would like to see in your products?

Another opportunity is to look at new subdivisions of data and new data elements. One thousand companies looking at the same data elements will typically draw the same conclusions as to the desirability of a certain class or subline of business. Successful companies frequently look at new and different data to acquire fresh perspectives.

The main point is that it's tough to shrink your way to greatness. A little creativity can go a long way in opening up new business opportunities.

Create Pockets of Opportunity via Operational Changes—Examine new distribution channels with desirable allies, identify new market segments based on demographic and income characteristics. Look at where the economy is growing in desired target industry groups and geographic regions and strive to offer competitive prices and good service to these niches.

Look at your claims operations and strive to maximize efficiencies and best practices to reduce claim cost trends and identify and reduce fraud.

Take a hard look at managed care. Many of the big HMO/PPO plans in Connecticut recently raised rates by 6 percent to 10 percent after several years of little or no rate increases. This trend appears likely to become national. HMO's have been absorbing rising underlying claim costs for several years but haven't passed them along to customers due to strong competitive pressures. This cannot last. Therefore, trends in medical costs appear to be headed north again. A good managed care plan is necessary to restrain these costs.

Be Realistic About the Fundamentals—Regardless of what competitive pressures may do to the actual prices charged, you need a true compass as to what your actual costs are.

Many of the large national companies that foundered during the last cycle were overly optimistic about their ability to underwrite and control costs. Prices and reserves were also too optimistic. These companies have

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Thanks to 'Father of BBS'

Kirk Fleming

ARLINGTON, Va.—The CAS Board of Directors extends heartfelt appreciation to **Kirk Fleming,** "father" of the CAS Bulletin Board System (BBS). Fleming was single-handedly responsible for conceiving, launching and operating the BBS. The BBS met a significant need of the membership and was a key factor leading to an Internet presence today. With the establishment and growth of the CAS Web Site, the BBS was deactivated in March.

The BBS enjoyed tremendous success and popularity since receiving its first call on August 17, 1993. In three and a half years, a total of 882 users dialed into the BBS, and close to 150 files were uploaded and downloaded. The most popular of these files were the lists of passing candidate numbers. During the biannual two-week periods that passing candidate numbers were released on the BBS, the system received an average of 800 calls. The BBS also served as host to CASNET, the CAS E-mail mailing list, and sent or received over 100,000 messages during its existence.

Though the BBS is no longer active, Fleming is. He continues to contribute his technological expertise through active membership in the Committee on Online Services. Thank you, Kirk! ■

New CAS Web Site Feature: Actuarial Reference Index

Reinsurance Articles Available

ARLINGTON, Va.—Check out the *Online Catalog*, the newest addition to the CAS Web Site. The *Online Catalog* is a searchable index of actuarial research articles, similar in content to the current paper CAS *Bibliographies*. Web site visitors can search, right now, the first completed section of the catalog and look forward to an expanded database in the near future. The newly formed CAS Committee on Online Services (COOS), charged with identifying existing and new CAS services that can be delivered electronically through the Internet, is confident this new product will become an invaluable resource to those researching actuarial science literature.

The *Online Catalog* can be searched in a number of ways. In addition to searches on standard fields for bibliographical citations (e.g., author's name(s), title, publication name, publisher, and year) users can search for papers on any subject by entering a word or phrase related to the subject. The abstract field in the database will be scanned for a match to the word or phrase entered. For example, the *Catalog* can be searched for matches on the word "catastrophe": the results would include any article with the word "catastrophe" in its abstract.

The search results will display a wealth of information for each paper fitting the search criteria. This information includes the article citation, topical category of the article, prizes awarded for the article and available abstract of the article. Hyper-links to copies of the full text will be established for articles available in an electronic file.

The "Reinsurance Research" section of the current *Bibliographies* is the first to go online. Eventually, the entire existing *Bibliographies* will be available. Future additions will be accomplished through the establishment of a standard procedure. With the cooperation of other CAS committees, as well as the authors of existing and future papers, COOS hopes to have complete citations, including abstracts, for all papers included in the *Catalog*. COOS expects the *Online Catalog* to be far more useful to researchers than the current paper *Bibliographies* because it provides more information, is more user friendly and can be updated more frequently than its paper counterpart.

Access the *Online Catalog* through the CAS Web Site at www.casact.org, or head directly to the *Catalog* by pointing your web browser to www.casact.org/casbib.pro. If you have any suggestions regarding the new *Online Catalog*, COOS would be pleased to hear them. Feel free to make suggestions via the feedback form on the CAS Web Site or forward them to any member of COOS. Questions on the operation of the *Catalog* should be directed to Mike Boa at the CAS Office at (703) 276-3100 or mboa@casact.org. ■

Subscribe to CASNET

CASNET is an Internet E-mail mailing list on casualty actuarial topics. Subscribers to CASNET are free to discuss any topic of interest to people who have casualty actuarial science in common. Topics include research questions, CAS exams, exam passing techniques, CAS business, actuarial jokes, and more. To subscribe to CASNET send an E-mail (example below) to the automated list manager at caslists@lists.casact.org with the command to add you to the list.

Example:
FROM: actuary@emailservice.com
TO: caslists@lists.casact.org
SUBJECT: N/A
BODY: Join CASNET

Please direct questions or comments to mboa@casact.org. ■

CAS Seeks Nominations for Rodermund Service Award

ARLINGTON, Va.—Using letter, fax or E-mail, CAS members can forward their nominations for the 1997 CAS Matthew Rodermund Service Award to the CAS Office. The Rodermund award recognizes a CAS member who has made significant volunteer contributions to the actuarial profession. The award will be presented at the 1997 CAS Annual Meeting in November in Palm Desert, Calif.

When nominating a CAS member for the award, members are asked to include information detailing the nature of the nominee's volunteer service to the profession or Society. (The biographical section of the *Index to Literature of the Casualty Actuarial Society* is a good source of information on member contributions.) Please note: Service as an elected CAS officer or director, and authorship of *Proceedings* and discussion program papers will not be considered in the selection process. Past presidents of the CAS are not eligible for the award.

Members should return nominations to the CAS Nominating Committee Chairperson, Irene K. Bass, c/o Casualty Actuarial Society, 1100 North Glebe Road, Suite 600, Arlington, Va. 22201. The fax number for the CAS Office is (703) 276-3108; the E-mail address is office@casact.org.

CAS members established the award in 1990 to honor **Matthew Rodermund's** many years of volunteer service to the CAS. Rodermund, who is the Editor Emeritus of the *Actuarial Review*, spent many years coordinating all phases of the production process of this publication with the help of his wife, Edythe, in their home.

Former recipients of this award include: **Walter J. Fitzgibbon, Jr.**, **Dale A. Nelson**, **Robert A. Miller**, **Robert A. Bailey**, **Norman J. Bennett**, and **Robert B. Foster.** ■

CASSANDRA

From page 1

is where the future lies, and it is where the jobs lie.

The SOA examination system is being restructured. The SOA Associateship exams cover all the material on the casualty Parts 4A, 4B, 5A, 5B and much more. They have various electives for the Fellowship exams, and they intend to cover all contingencies, not just life contingencies.

How simple it would be to add a ratemaking and reserving casualty exam as another elective! Let the SOA graduate casualty actuaries, just as they graduate life actuaries.

We hear numerous objections from our casualty brethren, some embarrassing and some just silly.

1. *But the casualty education leading to the FCAS is more rigorous than an SOA education in casualty topics would be.* This is probably true, and it is surely convincing to CAS members. It sounds like a joke to most life actuaries, who see the CAS Examinations as a poor imitation of the SOA tests.
2. *But only CAS members are qualified to sign the property/casualty Statement of Actuarial Opinion.* It would indeed take a few days to have the NAIC and the American Academy of Actuaries grant qualification to casualty actuaries graduated by the SOA.
3. *But the SOA has promised that they will rely on the CAS for the casualty exam.* No doubt the SOA will invite the CAS to help them design their casualty exams and to recommend syllabus readings.
4. *The public knows that CAS Fellows are the true casualty actuaries.* On the contrary, the public knows of the "Society of Actuaries." The public even knows what the actuary does: The actuary studies mortality rates, sets life insurance premiums, and establishes pension plans. If pressed hard enough, the public would admit that this actuary probably sets auto insurance rates as well. The SOA would nod in assent.

If we wish to remain independent of the SOA, we must establish a more forceful public image for the CAS.
—Sholom Feldblum

The CAS is a wonderful society. We are small and cohesive; the future beckons brightly; and we may soon be dismembered.

What solutions might be recommended?

We are a reticent society. Whenever a public posture is required, we defer to the American Academy of Actuaries. The CAS stays in the back room. But the public associates the American Academy with life actuaries.

If we wish to remain independent of the SOA, we must establish a more forceful public image for the CAS. *(Author's emphasis.)*

Is this a recommendation? No, not really. Casualty actuaries are busy fellows. The American Academy of Actuaries handles public relations. Our volunteer committees are a poor comparison to their salaried staff. Few casualty actuaries want to take on the lobbying and marketing activities that the Academy performs.

So it is not a recommendation—surely not a recommendation from me. It is indeed pleasant to have our society as the education foundation of casualty actuarial science, and to have the American Academy handle the "public interface" chores. But it means that one day we will be a vestibule in the House of the SOA.

Sincerely,

Sholom Feldblum, FCAS, CPCU, ASA, MAAA ■

Ethical Issues Part II: Actuaries Respond in Theory

by Jerome A. Scheibl

Editors Note: This article is one of a series written by members of the CAS Committee on Professionalism (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 Professional Standards as they may apply in real life situations.

The February *Actuarial Review* asked readers to comment on the implications of professional standards of conduct, practice and qualifications involved in a hypothetical situation. The situation involved an insurer who abruptly terminated its contract with its consulting actuary as the actuary was conducting the year-end reserve analysis. Readers were asked to focus on the manner in which the terminated actuary and the successor actuary conducted themselves.

Briefly, the situation was this: Perfection Mutual Casualty Insurance Company (PMC) terminated its contract with Pat Firmly, consulting actuary, after Firmly noted in a November analysis that PMC's experience for commercial lines had deteriorated sharply and would probably result in a reduction in surplus at year-end. PMC management argued that Firmly's analysis relied too heavily on industry development factors for long-tail lines and was otherwise unrealistic as far as its projections of IBNR reserves.

Harry Hyde, consulting actuary, was retained by PMC in February to issue an actuarial statement of opinion on its year-end reserves. Hyde requested Firmly to furnish his workpapers for prior years. Firmly refused and accused Hyde of stealing one of his best accounts by promising a favorable opinion on lower reserves. Hyde used crude combined lines experience furnished by PMC management and issued an unqualified actuarial opinion to the effect that PMC's reserves were within an acceptable range. These reserves produced a nominal increase in PMC's surplus.

Readers' Responses

As of press time, this is what the readers had to say. One reader suggested that the ABCD send counselors to visit Hyde as Hyde accepted PMC's assertions apparently without question. This same reader observes that "...we must not allow our professionalism to become corrupted by marketing, claims, or underwriting mythologies." Another reader stated that Hyde's work should have been peer reviewed and that his evaluation should be monitored for its performance over time.

"...we must not allow our professionalism to become corrupted by marketing, claims, or underwriting mythologies." — A Reader

As for Firmly, a reader felt that he appeared to have "done all the right things" although there may have been room for satisfactory resolution with his client if reasonable flexibility would have permitted it.

The same reader expressed an opinion that Firmly's refusal to furnish workpapers was appropriate as Hyde had no *a priori* expectation to such workpapers and Firmly had no obligation to furnish them. However, Firmly had no basis for his accusation against Hyde and should not have made it. Accordingly, he feels that Firmly could (or should) be reported to the ABCD.

Observations

Two questions arise regarding Hyde's performance. In accepting this assignment, did he "...act honestly and in a manner to uphold the reputation of the actuarial profession..." (Precept 1), and did he "...perform professional services with integrity, skill, and care" (Precept 2)? Certainly he was aware that Firmly was dismissed because of a disagreement with PMC regarding reserve levels. While Hyde had no obligation to arrive at the same conclusions as Firmly, he would have been prudent to have requested PMC's consent to consult with Firmly in order to prepare adequately for the assignment and to make an informed judgment as to whether there were circumstances involving a potential violation of the Code of Professional Conduct (Annotation 11-3).

At any rate, Hyde's knowledge that his reserve recommendations differed from Firmly's enhanced his responsibility to carefully document his work to support his alternative opinion (Annotation 11-2 and Actuarial Standard of Practice No. 9).

ABCD does not automatically counsel actuaries every time someone suggests it do so. Before the ABCD could counsel Hyde (or recommend that Hyde's membership organizations take stronger action against him), the ABCD would first consider whether Hyde's conduct had apparently breached applicable standards of professionalism. If so, the ABCD would then conduct an investigation before determining how to deal with Hyde's conduct. If Firmly obtained a copy of Hyde's opinion and submitted it to the ABCD, this is one instance where the ABCD might well decide to investigate and (at least)

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PRESIDENT

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casualty papers. To the credit of the SOA leadership, they recognized there could be some CAS sensitivity and held up distribution of the brochure to get our reaction. The reactions of individuals in the leadership and on the CAS Board to the brochure were widely varied, from mild concern to significant upset. The SOA leadership expressed willingness to hold up or alter the brochure in response to CAS concerns. Unfortunately, through no fault of the SOA, a miscommunication from me caused them to fairly assume we were comfortable with the brochure and it was mailed. The fact that the SOA leadership flagged the issue to us, even though perhaps later than we might like, was completely consistent with the assurances they provided on the *Journal.*

The third event came to light during the Board discussion of the *Journal* in the February meeting of the Board. It was the direct solicitation by telephone of CAS authors to write for the *Journal.* This was outside the boundaries we understood and led to the Board asking that we protest to the SOA leadership and communicate to the membership. The strength of the response was dictated both by the apparent flagrancy of the solicitation and the desire to clearly evidence the sense of independence articulated in the strategic plan. The speed of the response resulted from the desire to let the membership know what was happening before the brochure arrived.

Many may view this as a sign of weakened relationships between the SOA and the CAS. I do not.
—Bob Anker

Many may view this as a sign of weakened relationships between the SOA and the CAS. I do not. In actual fact, we are cooperating more effectively in many ways than we ever have and we should be able to continue to do so.

The new CAS strategic plan is a document in which we define ourselves clearly. The focus in the plan allows us to live the definition and make it real to others. It gives us the framework for asserting our independence and stature as a body of skilled professionals while fully participating with others who share the fundamentals of our profession if not our specialty. Good relationships always come from strength. ■

EDITORIAL

From page 2

the operations of AERF and SOAF could be brought together provided sufficient protections can be built in to assure the CAS of the independence of the SOAF from the SOA. The first attempt to resolve these issues failed after several months' work. Another attempt is about to begin with a fresh team of "negotiators" for the SOAF.

It doesn't take a rocket scientist to connect the dots and see the possibility of the *NAAJ* and the SOAF serving as two posts of a fence that is under construction. And to make the parallel even more plausible, the CAS has been engaged by the SOA in collegial consultations that taste sweeter than Iowa corn.

...the CAS has been engaged by the SOA in collegial consultations that taste sweeter than Iowa corn.
—C.K. "Stan" Khury

A recent graphic illustration of the level of sophistication to which that "engagement" has risen is given in a letter that our president, Bob Anker, received from the president of the SOA, David Holland, in response to Anker's letter of protest over the actions of the SOA in connection with the distribution of the *NAAJ* to CAS members and the solicitation of members of the CAS for articles for the *NAAJ.* Quoting from Holland's letter: "...an organization (you can read CAS) exists because it meets the needs of its members. As long as the members feel that their needs are best served by retaining individual sovereignty of their organization, it is futile for anyone (you can read SOA) to even think about anything else. *(Editors note: In the preceding sentence, the words in parenthesis are part of the direct quote.)*

While this thought is intended to allay our concerns, it is very difficult for us not to interpret it as saying "...don't worry about all the fuss and noise we're making with the fence posts and wire."

Fellow hogs, are we being had? And just who is being piggy anyway? ■

PURSUITS

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land, Laos, Malaysia, Indonesia, and Hong Kong. From Hong Kong, they flew to San Francisco and were married two weeks later on New Year's Eve.

In all, their journey took just over 13 months. During that time they made "touristy" excursions, like visiting the Taj Mahal, as well as unusual trips such as traveling for two days on a cargo boat down the Mekong River.

One amazing fact about this trip is that so little of it was planned. As a result, the travelers resorted to every and any means of transportation available, including trains, planes, cars, camels, boats, and even walking. It is also amazing that neither the AIQ nor her fiancee spoke the native languages in any of the countries they visited.

Readers, if you'd like to hear more about this journey, you might ask Jacqueline Frank Friedland about it the next time you see her.

Actuarial Research Conference Scheduled

The University of Calgary, Calgary, Alberta, Canada, will be the site of the 32nd Actuarial Research Conference, August 6-8, 1997. Dr. David P.M. Scollnik of the University of Calgary is coordinating the event.

The conference is co-sponsored by the CAS and the Society of Actuaries and is for North American academics and researchers. Each year the papers presented at the conference are published in the *Actuarial Research Clearing House (ARCH)*.

For more information on the conference, refer to the World Wide Web site: http://balducci.math.ucalgary.ca/32ndARC.html.

QUARTERLY REVIEW

From page 6

higher if the manager makes more estimates (for example, follows 1,000 stocks rather than 100) or makes estimates more often (quarterly rather than annually). Of course, it should be more difficult to make equally good estimates on more stocks or independent estimates more often.

Part I of the book includes five chapters on theoretical foundations. Chapter 2 discusses the Capital Asset Pricing Model. The authors discuss various limitations on CAPM, but conclude that it provides a good structure for active portfolio management. Indeed, the authors use a mean-variance approach for virtually all of their analyses. Other approaches, such as shortfall risk, do not fit easily into their framework.

Chapter 3 discusses risk, which the authors define as the standard deviation of return. Of interest is their "multiple-factor" risk model, which structures the variability in returns of various assets into an "exposure" element, for each asset, and an excess "return" element, for each factor. For example, returns may be divided into returns due to such factors as: external economic influences, industry, market capitalization, dividend yields or earnings momentum. The key is for the active manager to devise and test various models that will efficiently explain historical returns. Better models (and better forecasts of important factors) may yield better forecasts of individual asset returns.

Chapter 4 discusses exceptional returns, benchmarks, and added value. Exceptional returns are returns in excess of the consensus forecasts of return. This chapter also quantifies the risk in taking a strategy that deviates from the benchmark. The book does not discuss strategic asset allocation, which is the decision by the asset owners to allocate assets to various investment classes.

Chapter 5 deals with the "information ratio," which is defined as the ratio of the residual return (versus the benchmark) to the residual risk. It also discusses the "residual risk aversion," which is the aggressiveness with which the manager chooses to exploit superior information. Chapter 6 ties all of the foundations together in the "Fundamental Law of Active Management," which was discussed above.

Part II includes three chapters on expected returns and valuation. Chapter 7 explains the Arbitrage Pricing Theory. This is presented as a multiple-factor model of expected returns. Chapter 8, "Valuation in Theory," presents discounted cash flow models, including risk-adjusted interest rates. Chapter 9, "Valuation in Practice," discusses dividend discount models.

An important insight is that 75 percent of the value added usually can be gained with about 50 percent of turnover (and transactions costs).

Part III discusses implementation. Chapter 10, "Forecasting," is concerned primarily with the variability of forecasts. Chapter 11, "Information Analysis," shows how exceptional returns from forecasts can be measured. Chapter 12 describes "Portfolio Construction." Chapter 13 explains "Transactions Costs, Turnover, and Trading." An important insight is that 75 percent of the value added usually can be gained with about 50 percent of turnover (and transactions costs). Chapter 14, "Performance Analysis," has the goal of distinguishing the skilled from the unskilled manager. Chapter 15 discusses "Benchmark Timing" and concludes that it is very difficult to add value due to timing the market (such as, cash versus fully invested positions).

In summary, the book provides a good discussion of many important investment concepts and principles.

CAS Leadership Meeting Held in Philadelphia

PHILADELPHIA, Pa.—The 1997 CAS Leadership Meeting on April 2 brought 40 committee chairpersons, exam committee officers, and other key leaders together with the CAS Executive Council for a full day of contemplation and discussion of the vision of the CAS' future and how individual committees could work to support that vision.

Heading the meeting was **Mavis A. Walters,** president-elect of the CAS. "The overriding theme for the Leadership Meeting is the tremendous growth the CAS has recently experienced. We should not assume that we can simply do in the future what we have done in the past and continue to be successful," she explained. "We must re-examine the structure and operating mode of the CAS to see if we are positioned to deal with this growth in membership," she said.

The key issues relating to the growth of the CAS and its relationships with other actuarial organizations were addressed during the general session. They were:

- **Independence of the CAS.** CAS President **Robert A. Anker** outlined the issues that have arisen from the CAS' Strategic Plan and the commitments the Board has made to address those issues. He also provided further explanation of the relationship with the SOA and its *North American Actuarial Journal.* The Strategic Plan, Anker said, "was the first time we said we were independent. We will have to assert ourselves very differently than we have in the past."
- **Development of the new exam structure and joint CAS/SOA exams. Steven G. Lehmann,** chairperson of the CAS Task Force on Education, reported on his group's progress toward reaching its goals and the current status of its work. He also discussed the considerations of continuing joint sponsorship of exams with the SOA. Of the exams outlined in the draft CAS *Syllabus,* "The first four exams are candidates for joint sponsorship," Lehmann said, "As is exam eight." But he countered that it would only work if both organizations wanted to test the same materials and concepts with similar intensity.
- **Participation with other actuarial organizations. C.K. "Stan" Khury,** member of the CAS Board of Directors, provided an update on the status of the negotiations for the merger of the Actuarial Education and Research Foundation with the SOA Foundation. "The prospects are mixed for the relationship with the SOA Foundation," Khury explained. **David G. Hartman,** chairperson of the International Relations Committee, explained how the desire of the International Forum of Actuarial Associations (IFAA) to make public statements on behalf of its membership is complicated by the fact that the CAS itself is unable to make public statements without 90 percent of Fellows voting. Also, Hartman explained, "The CAS is one of five U.S. associations in the IFAA membership and shouldn't the U.S. actuarial organizations speak with one voice?"
- **Strategic planning and the Long Range Planning Committee's report.** Committee Chairperson **John M. Purple** introduced three topics: the consequences of growth for the CAS, the ramifications of remaining an independent actuarial organization, and the "2020 Scenario"—a look at life and the CAS in the year 2020. "Meeting with CAS leaders has allowed us to evaluate each of these three areas in light of the recently published CAS Strategic Plan," Purple commented.

Meeting participants broke into group discussions according to functional areas: organizational support, the examination process, research, continuing education activities and policy development. The breakout sessions provided commit-

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Actuarial Sightings

From *The Wall Street Journal,* February 11, 1997, page 1. Submitted by **Walter C. Wright.**

"Josue Villa, an actuarial assistant at Citizens Inc.... says he is allowed to use his full brainpower." Wow! Imagine the power unleashed in his workplace!

From the *Boston Sunday Globe,* March 16, 1997, page 1. Submitted by **Louis Brown.**

"Detective Walter 'Mitty' Robinson Jr. looks as threatening as an actuary: short and balding, with wire-rim glasses and a neat, gray goatee." What CAS member meets that description?

From the PBS television show *Finding Financial Freedom* with Jonathan Pond. Submitted by **Paul A. Chabarek.**

While discussing the financial tip of spending less than you earn, Pond commented that among spouses, very frequently "spenders" are married to "savers." He then followed it up with a remark something like "...Now, you wouldn't want both spouses being savers, would you? That would be like having an actuary married to another actuary."

Correction

Please note that Rajagopalan K. Raman (FCAS 1987) is a Fellow in good standing with the Casualty Actuarial Society. Due to a computer error, Raman's 1997 CAS *Yearbook* listing was incorrect. The CAS regrets any confusion this error may have caused.

LEADERSHIP

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tee leaders with the opportunity to discuss and brainstorm on committee-level management issues, the ramifications of independence and the consequences of CAS growth. The results of the discussions were reported to and discussed by the volunteer leaders at the end of each breakout session.

Some of the ideas raised during the brainstorming sessions were:

- Methods for enhanced communication among the CAS leadership structure, within committees and with the membership at large.
- International outreach to include continuing education and non-member status for international students.
- Reimbursement of volunteer expenses.
- Sustaining the CAS volunteer culture, welcoming new members and additional ways to introduce new Fellows to volunteer opportunities.
- Expanding the use of the CAS Web Site. ■

DFA Seminar Planned

ARLINGTON, Va.—The 1997 CAS Special Interest Seminar on Dynamic Financial Analysis will be held July 21-22 in Seattle, Wash., at the Sheraton Hotel and Towers. This seminar is designed to enhance the actuary's role in assisting insurance company management in decision making.

Sessions are planned for beginning and more experienced DFA professionals. Basic education sessions will introduce the fundamental concepts of business planning and the asset side of the balance sheet. A series of sessions devoted to state-of-the-art dynamic financial modeling are also being planned, with a focus on advanced asset and liability modeling techniques. Attendees will also hear from the actuary's customers for DFA work, with comments from outside regulators and rating agencies and company management.

The seminar will feature presentations of the call paper program on DFA variables, directed by the DFA Task Force on Variables. The research being done in the area of selection of appropriate variables for the models builds on the research presented at last year's seminar.

Susan T. Szkoda is the featured speaker. Szkoda is the CAS Vice President—Continuing Education and was the chairperson of the committee that published the *DFA Handbook* in 1996. Szkoda is a consulting actuary in Glastonbury, Conn. A series of her articles on DFA is appearing in the *Actuarial Review*.

Szkoda views DFA as an important means of getting a diverse group of professionals within an insurance organization to think about how knowledge and decisions interact with one another. That way individuals can develop a single holistic view of the organization. Szkoda comments, "The quality of decision-making improves, if people at many levels and areas of the organization are talking to one another. DFA can be the catalyst for sharing knowledge and the distribution of it throughout the organization. The discipline of looking at the company through a structured DFA process is beneficial at all levels of the organization." ■

BRAINSTORMS

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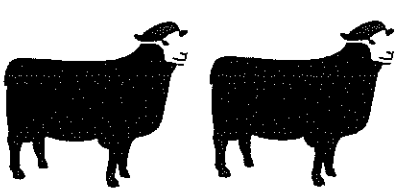
on how the cloning was performed is located at **www.slate.com/Features/Biology/Biology.asp.** An article on the relationship of cloning to twin studies is located at **www.slate.com/Features/Multiplicity/Multiplicity.asp.** One of these articles points out that Dolly is not the first cloned mammal, as many news reports have stated. (For that matter, she is not the first cloned sheep, nor even the first successful cloning performed by Scottish scientists.) ■



DYNAMIC

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not survived as independents.

I believe that the current cycle will similarly create a few spectacular winners and a few spectacular losers. Most companies will simply tread water. The ability to spot turning points in the cycle before the crowd brings opportunities for tremendous profits. The opposite brings opportunities for tremendous losses. Realistic assessments of the fundamentals and appropriate strategic business decisions make all the difference.

Last, it's important to take a hard look at the prices being paid for acquisitions. Irrational exuberance can saddle the acquirer with a heavy financial burden for years to come.

The activities listed above require significant actuarial analysis. Sound actuarial analysis is the foundation for developing appropriate business strategies. These strategies and associated relevant data may then be loaded into the DFA model. Typical DFA model output would include income statements (GAAP and Statutory), balance sheets, capital ratios (such as RBC and IRIS) and cash flow statements. The results of all the relevant output exhibits need to be considered in the selection of appropriate strategies. Statutory and GAAP accounting rules and proposed changes to such rules also need to be considered.

DFA actuaries have prime roles in helping management find suitable strategic paths. The next few years will present a challenging environment. DFA scenario testing can be a positive factor in helping your company thrive in this environment. ■

Babies—A Pink or Blue Addition Problem

by John Robertson

A nurse has just started to count the babies in a hospital nursery. He has just counted that there are two boys, and has not counted the girls, when, at 11:00, a new baby is brought in to the nursery. A baby is then selected at random, from all the babies present, to have its footprint taken. The selected baby happens to be a boy. What is the probability that the baby added at 11:00 was a girl?

The Snowplow

This puzzlement had snow falling at a steady rate. A snowplow started at 6:00 A.M., drove in a straight line, and removed snow at a constant rate (in cubic feet per minute). In particular, the deeper the snow got, the slower the snowplow went. The plow went twice as far in the first hour as in the second hour. The question was, when had it started to snow?

Mitch Pollack's solution set a as the time it began to snow. Then the speed of the truck at time t is inversely proportional to $t-a$. As the truck goes twice as far between 6 and 7 as it does between 7 and 8,

$$\int_6^7 1/t-a \ dt = 2\int_7^8 1/t-a \ dt.$$

This gives $ln(7-a)-ln(6-a) = 2(ln(8-a)-ln(7-a))$ which simplifies to $(8-a)^2(6-a)=(7-a)^3$, or $a^2-13a+41=0$. Solutions are $a=(13\pm\sqrt{5})/2$, of which only the "-" solution is less than 6. Therefore, it began to snow at about 5.382, or 5:23 AM.

Solutions were also sent in by Donald Behan, Alex Bondarev, **Jeff Eddinger, Chuck Emma, Walter Fransen,** Kevin Hobbs, Ignace Kuchazik, Andy Minten, Melissa Neidlinger, **Dmitry Papush,** Nathan Schwartz, Michael Shackleford, **Ahmad Shadman,** Mike Singer, **Louis Spore, Jim Wickwire,** and Paul Zotti. We are grateful to **Pete Lindquist** for suggesting this puzzle.

Acute Dissections

Chris Stembach pointed out a gap in the proof we gave for this puzzle. In regard to the first line drawn, which must end in the interior of the triangle, we stated, "There must be four other lines emanating from the end of [this] first line in order that all of the angles created are acute." We neglected to consider the case where a line passes through the endpoint of the first line. One such line, plus one other line that terminates at the endpoint, could suffice to make all angles acute at the endpoint of the first line. Consideration of this case does not change the final solution. Chris advises, "Actuaries beware. Do not forget to check the validity of your assumptions."

ETHICS

From page 15

counsel Hyde in better practice.

Understandably, Firmly was upset over losing a client because he had done what he felt was right and resented what appeared to be a willingness by Hyde to compromise his integrity. While the Code of Professional Conduct does not supersede the constitutional right of free speech, it does require that discussions between actuaries or observations to third parties should be conducted objectively and with courtesy (Annotation 11-1). Hyde could have had cause for requesting a disciplinary investigation against Firmly if Firmly's accusations amounted to a breach of courtesy, or if his public comments were such that they reflected on the reputation of the actuarial profession or were found by the courts to be acts of libel or slander.

ASOP No. 9 provides that "Documentation should be available to the actuary's client or employer, and it should be made available to other persons when the client or employer requests, assuming appropriate compensation...." Although Firmly may have had ownership rights to his "workpapers," he had the obligation to furnish such "workpapers" to Hyde in exchange for a reasonable compensation. As a practical matter, however, Firmly would not be required to furnish any material of a proprietary nature such as computer programs (Annotation 11-3).

The Next Problem

Barbara Seville, FCAS, MAAA, and actuary for the state of Euphoria discovered a major deficiency in loss reserves for the Domiciled Casualty Co. during a regular department examination of the company's financial condition. Further examination revealed that the company's actuary, Robin Banks, ACAS, had grossly misrepresented the company's workers compensation financial loss reserves by truncating loss development at five years, consistent with the unit statistical plan, and failing to provide for IBNR reserves. Banks also established rates for automobile liability which included no expense loadings. Banks was the only actuary employed by the company.

Is Seville obligated to file a complaint with the ABCD against Banks? If so, on what grounds? Would Seville be required to act differently if she were an actuary for a reinsurer or an auditing firm reviewing Domiciled's financial condition?

Send your comments, anonymously if you wish, to the Editor, *Actuarial Review,* by mail at the CAS Office address, by E-mail to office@casact.org, or by fax to 715/845-0935.

The Actuarial Review

Random Sampler
The Actuary as Expert Witness

by Charles L. McClenahan

At some point in their careers, many actuaries will be presented with the opportunity/obligation to present testimony as an expert witness. This testimony might be in court, in a deposition or as part of a regulatory hearing. Actuarial Standard of Practice No. 17 *Expert Testimony by Actuaries* provides essential guidance which, if followed, will help to assure that the testifying actuary will maintain his or her professionalism. What follows is some additional advice that may help the actuary to maintain the illusion that he or she actually possesses some expertise.

The advice I offer is basically this:

> Know your limits;
>
> Control your counsel;
>
> Don't pontificate, educate;
>
> Know the details (but keep them in reserve); and
>
> Don't get cute!

The first piece of advice—know your limits—refers to the area of your expertise. While it is unlikely that you will wander beyond those subjects in which you have been trained and with which you feel comfortable, under cross-examination you may be asked to extend your opinions in an attempt to make you look silly. For example: "Well, Actuary, you have testified that it is your opinion that the probability that the reserves are within 5 percent of adequacy is greater than 90 percent. Is it greater than 91 percent?" Give either a "yes" or a "no" to this question and you're trapped. Unless you have performed alternative calculations, the proper answer is that you haven't evaluated the reserves at that level of significance.

Controlling your counsel is possibly the greatest challenge in expert testimony. If you have helped to prepare the questions to be put to you on direct examination, make certain your attorney knows to ask them precisely the way they were written. Many lawyers don't like to read questions from a list, and in attempting to appear informal, turn elegantly crafted questions into garbled technospeak. When you get an unintelligible question, don't attempt to "fix" it with a good answer. Simply asked that the question be rephrased.

Pontification is the actuarial expert's worst enemy. In most cases, the only other mathematician in the room is the other side's expert. Everyone else, judge, jury, counsel, and other witnesses will likely be either intimidated by mathematics or suspicious of statistics. If you present yourself as an actuarial oracle who is there to hand down the numerical wisdom of the ages, you will impress no one but yourself. If, however, you can assist the judge and jury (or the hearing officer or commissioner) in a non-technical way to understand the basis for your opinion, you will be perceived as being helpful as well as wise.

The Greek philosopher Heraclitus said, "Men who wish to know about the world must learn about it in its particular details." Before giving expert testimony make certain that you know the source of every number and the rationale for every assumption that went into your opinion. If possible, you should have the same level of knowledge regarding the opinion of any other actuarial expert who presents testimony. But don't use the details unless they are needed—usually on cross-examination.

The final piece of advice is don't get cute. By this I mean don't use your skills and education to take advantage of those without your experience and training. Try to answer each question honestly and in a way which enhances the understanding of all parties. If you believe in your opinion you do not need to resort to gamesmanship or trickery to support your case. And if you don't believe in your opinion, you shouldn't be there in the first place. Expert testimony is not for everyone. I have seen a qualified and articulate actuary crumble under mild cross-examination. I have watched a normally concise actuary wax verbose until his own attorney's eyes glazed over. But to those who enjoy it, nothing measures up to the opportunity to defend a well-grounded actuarial opinion against the onslaughts of an alternative presented by another professional.