The Newsletter of the Society of Actuaries
VOL. 21, NO. 8
OCTOBER, 1987

THE Actuary

New Era— New Rules— New Risks

by Carolyn Pitts Corbin

(Ed. note: The following article contains concepts from Carolyn Corbin's new No. 1 Business Bestseller, Strategies 2000, *Eakin Press, Austin, Texas, and adapts changing socio-economic conditions to the actuarial profession.)*

It is common knowledge today that we have entered into an information-based, service-oriented civilization, the third such restructuring of societies since the beginning of humankind. Alvin Toffler in his book, *The Third Wave*, popularizes the idea of civilizations overlapping in long waves. If indeed we have entered into an entirely new civilization, it means that in many instances we are sailing unchartered waters. Rather than applying hard and fast statistics to predict outcomes, we are being called upon to use our "best guess" based on trends. The evolution of this new civilization can have a profound effect on how the actuary does his or her job because this third civilization will introduce new and undocumented risks.

The Third Wave Civilization

Beginning in approximately 1973, North America entered the Third Wave Civilization.* In that year more people were in white collar service

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*The First Wave civilization was predominantly agricultural and occurred from 8000 B.C. to the early 1800s. The Second Wave came about during the War of 1812, with the U.S. beginning to manufacture many of its own products.

Major Issues Facing the Society of Actuaries

The Actuary's features editor, Deborah Poppel, visited with Harold Ingraham, Jr., President of the Society of Actuaries, to discuss several major topics characterizing his term in office: the actuary of the future, the FES/FEM proposals, and the unification of the profession.

Poppel: How will the actuary of the future be different from the actuary of the present?

Ingraham: The actuary of the future will be less of a technician and more of a business person or general manager. The successful actuary will need to be good at the things that good managers do; that is, leading interdisciplinary task forces, doing more conceptualizing, and above all, being an effective communicator.

Poppel: What external forces are driving the change?

Ingraham: Actuaries used to think that when they achieved Fellowship they had it made, that they had a glorious route to retirement which would pay good money and they'd be the kings of all financial areas they surveyed. What's happening now is that many companies are restructuring. They're abolishing the chief actuary's position as they reorganize from a functional to a line-of-business operation. Each line of business has a product and marketing champion, and the actuary now serves in more of a controller's role within the line of business. The actuary's role has been redefined and, in some instances, downgraded.

Another force changing the role of the actuary is the widespread availability of computers. Much of the commutation-based life contingencies in Jordan, and Spurgeon before that, was directed toward ingenious mathematical shortcuts. But consider the valuation of liabilities today—it's done seriatim; you don't need shortcuts. Our horizons have broadened, but we're also playing on a field that others can play on too. We've got to be better than the others or people aren't going to use us.

Poppel: Have we lost our edge?

Ingraham: The walls are down; we're not able to practice our arcane craft in an ivory tower, so to speak.

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Major Issues cont'd.

I am very proud to be an actuary. I think we have skills to bring to a number of areas where other people can also participate, and we can play a particularly strong role. But we have to be conscious of and prepared for these opportunities, and we have to be able to communicate effectively what we perceive or we aren't going to have much impact on the emerging results.

Poppel: *If actuaries are needed less to do the traditional tasks, what* will *they be doing?*
Ingraham: Some of the new areas will include the analysis of cash flows and interest-rate risks, the impact of AIDS on society, prefunding of post-retirement health care benefits, and the funding of continuing-care retirement communities. Particularly, I think the actuary should follow the lead of his U.K. colleagues and get more involved in the investment side of the business.

Poppel: *Those sound like technical jobs to me.*
Ingraham: Yes, they involve applications of traditional actuarial analysis to a broader spectrum of issues. They serve as opportunities for actuaries to effectively interface with other disciplines in seeking solutions to industry and societal problems.

Poppel: *Can actuaries be taught these skills, or is it more a matter of recruiting a different type of individual to the profession?*
Ingraham: That's an important point — we need to modify our recruiting material, even at the high school level, to deemphasize somewhat the mathematical focus of the profession and try to stress more its broad-based business elements. We need more people with liberal arts backgrounds. One idea, now just a gleam in my eye, is to develop an investment track to Fellowship under FES, which would serve as a magnet to attract some of the MBA candidates from the leading business schools. These schools now have marketing and finance majors; there's no reason they can't have actuarial majors. A major goal of FES and FEM is to create a more dynamic and relevant education and examination system that will attract a broader group of people.

Poppel: *What, briefly, are FES and FEM?*
Ingraham: FES (Flexible Education System) is designed to make our syllabus more flexible, more like a college catalogue. There is certain core material, and certain required material at the Fellowship level in the chosen specialty, with the balance being electives. FES for Associateship was implemented with the May 1987 exams; FES for Fellowship will start in the fall of 1988.

The FEM (Future Education Methods) proposal includes about a half dozen things, such as accepting college course credit or exams of other organizations, refereed research papers, and intensive seminars in lieu of certain exams. The most interesting one to me is the Fellowship Admission Course. This would be a 2½ day course taken by all those who have otherwise completed the Fellowship exams. The course would focus on professional ethics using case examples, as well as the integration of syllabus material.

Poppel: *Could someone fail that course and be denied Fellowship?*
Ingraham: There would be no exam; if you attended and participated you'll get your Fellowship. This raises a question, by the way, that a number of actuarial clubs I've spoken to this past spring have asked, "Why do you wait until people are about to be Fellows before you give them a professional ethics course?" The more I think about it, the more I think I agree with them. Thus, I'd like to review with the E&E Committee and then with the Board the feasibility of possibly breaking this into two parts, with the professional ethics piece presented to candidates for Associateship. It makes sense that when you first emerge as a professional with the Society of Actuaries, that's the time you need to have a sharpened sense for professional ethics.

Poppel: *How will FES and FEM help us attract and create the "actuary of the future" as you've described it?*
Ingraham: One goal of FEM is to create an educational system that will attract people with both technical and nontechnical skills. Right now we're losing out on some awfully good people, who regard the earlier exams as an unreasonable barrier to entry. The best anecdote I cite is the actuarial student who had passed 2 or 3

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Major Issues cont'd.

exams at a large company, and then left to enter an MBA program, because the MBA was a ticket he could punch at the pay window." The student felt it was unreasonable to expect someone to take another 6-8 years to become a Fellow in the Society, when in just 2 years he could be on Wall Street at a starting salary of $60,000 or more a year. That's the kind of competition we have.

Other goals of FES and FEM are to enhance the value of our Fellowship designation, and to provide for better and broader education consistent with the future needs of the profession as I've described them.

We can't stand still and settle for the status quo; we've got to reflect the changing business as well as social environment. Self study, which is the method we've used since the 19th century, has served us well in the past, but it doesn't always do the best job. For example, I went to MIT and Paul Samuelson was my economics professor. I have to think I learned more from him as a teacher than I would have from simply studying from his book.

***Poppel:** How will we know if FES and FEM have accomplished these goals?*
Ingraham: That's a tough question. It may be something like — "I can't put it in words, but I know it when I see it." Some years from now, we're going to have a feel for whether our ranks are being enriched with people who represent a broader cross section. Maybe we'll start hearing fewer actuarial jokes, and more favorable responses from nonactuarial employers of actuaries.

***Poppel:** Last spring the membership was asked to respond to a survey about FEM. What were the results?*
Ingraham: The 2,300 people who completed the survey were keenly interested in the proposals. The respondents generally agreed that the objectives set forth in the FEM proposal were very important and that the impact of FEM would be critical on two objectives: (1) providing better education to meet the future needs of the profession and (2) creating a system that would attract and train the people best suited to fill the role of the actuary. The respondents felt that FEM was going to meet these objectives fairly well or completely.

Regarding specific elements of FEM, only about half viewed the acceptance of college course credits and the exams of other organizations as meeting stated objectives. We received a much more favorable reaction to intensive seminars, research papers, and the Fellowship Admission Course.

***Poppel:** What will happen now?*
Ingraham: We have a commitment that by the October 1987 Board meeting we will either go forward, shelve it at least temporarily, or rework some of the proposals. It looks to me right now that the chances are high that we will move forward on most of the FEM proposals.

***Poppel:** How will the membership find out what decisions are made?*
Ingraham: If members attend the annual meeting in Montreal, they'll hear about it in my presidential address. The results will also be published in a future issue of *The Actuary.*

***Poppel:** What other changes would you like to see in the exam syllabus?*
Ingraham: I'd like us to consider abolishing Part 1, and maybe even Part 2, with the goal of cutting down on unnecessary testing that is driving away some very good people. Presumably if you don't know that material, it will be revealed in a later exam. I'd also like to see us strengthen the Associateship delegation. The Casualty Actuarial Society requires 7 exams to Associateship, because the CAS feels that since an Associate can certify loss reserves, he should be tested in that area.

***Poppel:** You've been an active participant in the drive to unify the actuarial profession. Why should the profession be unified?*
Ingraham: If we had a single organization representing all actuaries, it would improve our fragmented external image and strengthen the view that others hold of our profession. We could have a better chance of influencing public policy and expanding the role of the profession. We could interact more effectively with regulators and with other professional groups, particularly the accountants and lawyers. We'd be able to make more efficient use of the volunteer time and the staff of the various organizations. We'd reduce duplication and overlap on a whole variety of issues, and eliminate the need for unwieldy joint committees.

The time to look at this is when we don't have problems, rather than when we have a major flare up.

***Poppel:** If it's such a good idea, why aren't we unified?*
Ingraham: Because of history, to some extent, and because some of the actuarial organizations in the past have been concerned that they might lose their identity or integrity if unification occurs. To some extent, this could be addressed by guaranteeing different interests with senatorial representation on the board or executive committee of a unified organization. The current special-interest section structure could also be used to maintain separate identity within one organization. Perhaps you could have divisions comprising several related sections.

What made unification break down when it was discussed in the mid-1970s was a bitter battle over credentials. We'd have to come up with a way to make sure that unification was achieved without any degree of attendant grandfathering.

***Poppel:** How do you envision that unification might happen?*
Ingraham: I think the best chance of significant unification might involve the Society of Actuaries and the Casualty Actuarial Society, either on a formal or a *de facto* basis. The interests of life actuaries and casualty actuaries are intertwining to an ever-increasing extent. FES and FEM can lead to greater cross training of actuaries, in that, for example, some core casualty material could be required of all life actuaries and vice versa.

***Poppel:** What are the next steps in the unification process?*
Ingraham: A task force has been formed (described in the May 1987 *Actuary*) and will meet at least monthly. Its charge is to bring a recommendation back to the respective boards of each body by next March. Then there will be a joint executive committee meeting involving all actuarial bodies. Wouldn't it be great if we could achieve some elements of unification that we could announce by the 1989 centennial?

New Era cont'd.

jobs in America than in blue collar manufacturing jobs. Since then, more than three million jobs in the United States have been displaced in manufacturing, and more than five million jobs have been created in service industries.

As North America undergoes a major transition, a general uneasiness seems to exist. This is only natural since we are undergoing challenges unknown in nine previous generations. Five social shifts which occurred in the early 1800s are now recurring in the Third Wave Civilization, but in a different manner. As we examine them, we will review their possible influence on risk analysis.

1. Power Shift

The United States and Canada are becoming global countries, sharing their power with Japan, Great Britain, West Germany, France, and Italy. As foreign countries locate some of their business operations on North American soil, employee benefits might be based on their social and corporate culture rather than our own. For instance, in Japan it is important to base employee benefits on lifetime employment guarantees. In contrast, in the United States, the baby boom generation prefers shorter-term profit sharing plans that can be cashed in many years before retirement. As we figure employee benefit premiums based on different cultures and lifestyles, we will be assessing different populations with different risks. Our predictions will need a more international flavor.

In addition, product and service liability will be governed more by international practices. We will see the eventual creation of a combination of companies; one company producing a product, another engineering it, and a third marketing it. Assessing the actual liability for a product created by three organizations which in the process forms a fourth organizational structure will cause us to figure future risks differently. Also, as trade practices continue to loosen, product liability will have enhanced exposure due to world-wide use.

Insurance companies will become more like financial service organizations and eventually be owned by ten or more major world players. Strict identity of insurance companies, banks, brokerage firms, and savings and loan institutions will be lost.

2. Demographics

As we approach the 21st century, the U.S. will have at least four population characteristics: aging, educated, international, and illiterate. While some of these characteristics seem to contradict themselves, a dichotomy of demographics will be housed on North American soil. The aging population will consist mostly of baby boomers (born between 1946 and 1961) who will begin retiring in 2013. By the year 2000, the median age of the U.S. and Canadian population will be 36.

Baby boomers will have a tremendous influence on North America due to attitude, education, and aging.

Most baby boomers — one-third of the total population — are consumption-oriented, with a buy-now, pay-later attitude. As they begin to retire, a tremendous drain on the retirement system will occur. Because of their present savings rate, most baby boomers will not have enough personal income to supplement their retirement needs. Social Security will replace about 22%, and corporations about 15%, of the baby boomers' pre-retirement dollars. However, even if baby boomers wish to replace only 65% of pre-retirement income, a significant financial shortfall will exist. By the time the baby boomers begin to draw benefits, the baby bust following them will be in the workforce, meaning fewer workers will support the bulging Social Security system. In addition, there will be other strains on social and corporate systems and the military retirement system. Companies which have promised unfunded health benefits out of future earnings need to reevaluate their promises. If earnings do not provide those benefits, the aggressive baby boomers will not feel guilty about suing the corporation for perceived promises — verbal or written.

Another demographic impact will be immigration. Between 1987 and 2000, two-thirds of the population growth of the U.S. will be due to immigrants. These individuals will have different life spans. Some of them, with a certain life expectancy in their own countries, will adapt very differently to the U.S., and their life span will change as they immigrate here. New studies will need to be obtained on these transplanted foreigners. Many will not be immune to specific diseases, and it is possible that diseases long stamped out in America will be revived. For example, a large percentage of immigrants will not have had the polio vaccine, and there could be a recurrence of that disease. The unpredictability of disease in general and the spread of surprise traumatic diseases such as AIDS will make actuarial predictions more difficult.

The dichotomy of educated baby boomers versus illiterate Americans will also pose challenges. As the illiteracy count in the United States exceeds 27 million, and the functional illiteracy rate (not being able to read at the eighth-grade level) approaches a total of 40 million people in the U.S., society will be divided among the "haves" and the "have nots" based upon the educated and uneducated. With more people failing to reach a functional literacy rate, inner city decay and crime will increase, resulting in more homicides, suicides, and drug addictions. These circumstances will indirectly affect health and pension programs throughout North America.

On the other end of the spectrum, we also will have more educated people than ever before. For example, approximately 50% of the baby boomers will have at least a partial college education by the year 1995. The result will be the disappearance of the middle-class as we know it and the emergence of either the well-to-do or the poor based on amount of education.

3. Technoflation

Technology is rapidly increasing. Eighty-five percent of the great scientists who have ever lived are living today, and an individual 70 years of age or older has seen 90% of all the great inventions of the world. With such rapid change, new risks will be introduced with new inventions. For example, McDonnell Douglas and other aircraft firms are currently developing an ultrasonic airliner that can cruise three times the speed of the Concorde. This airliner will be able to make a round trip to Asia in the same day. We do not yet know the physical effects on the passengers, nor do we know the safety rate of these planes, but these are clearly areas which involve actuarial expertise.

In addition to the ultrasonic airliners, robotics will develop as a new field. By the year 2000, it is predicted that there will be 800,000 robots in the United States compared to 14,000 robots today. Just as we do not know the risks involved with

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ultrasonic airliners, it is difficult to determine all the risks involved in human interaction with robots. Safety records have yet to be determined, along with stress levels on humans working with various automation processes. Can you imagine actuarial tables based on machine life rather than human life?

By 1996 humans should be populating space stations. It is predicted that one to three million people will be colonized in space stations within the next ten years. The risks involved in space travel, the physical body changes, and the death rate of such individuals have yet to be discovered. It will be difficult to insure these people for health and life insurance and pensions until we collect statistics on outer space lifestyle.

For property and casualty underwriting, the payload insurance will be a topic of discussion. As billions of dollars are spent in experiments and millions of dollars are spent for shuttle cargo space rental, we will simultaneously need statistics on the risk factors involved in sending this payload out of this world. To determine the premium levels from a property and casualty standpoint will indeed be a significant challenge to the actuarial profession.

4. Industrial Focus

Industrial focus has now moved to service, which is not a *product* but a *process*. When one engages in service, one is highly dependent on human interaction. Since we are just entering a service economy, we have not begun to determine the liability of an organization to its employees. As corporations become more customer-oriented and employee-directed, it is possible that more problems will evolve from individual lawsuits against corporations than from the collective union bargaining experienced in the past. For example, workers are increasingly holding companies liable not only for environmental conditions but for their mental and physical health as well. Customers are beginning to hold corporations liable for both the services being provided and the products being designed and marketed. However, the more immediate liability for corporations will be in wrongful dismissal and age discrimination. Due to the future aging workforce, employees might begin to introduce class action suits against the employer to prevent downsizing through layoffs.

Potential liability also will occur in the area of employee mental stress, depression, and anxiety. Several lawsuits have already been cited where the plaintiff tried to hold the corporation responsible for a nervous breakdown. One recent example involved a case where a widow sued her husband's employer for $6 million. She claimed that the company was directly responsible for her husband's death because it did not respond to his repeated complaints of overwork, thus displaying a "callous and conscious disregard for his mental health." Corporate liability insurance premiums will probably rise more rapidly in the future, just as they have already with professional liability insurance.

5. Social Institution Dominance

In the third civilization more emphasis will be placed on individual responsibility. We will witness this phenomenon in the amount of entrepreneurial activity which will occur and in the growth of small businesses. Much of the insurance written will be calculated for small growth businesses rather than for the larger, mature businesses, the latter being the historical precedent.

Also, because of the emphasis on individualization in the new economy, there will be more need for niched underwriting. People will be grouped into smaller homogenous designations, and insurance will be written specifically for them. That trend has already started with smokers and joggers. It could extend to lifestyles, such as whether or not one works at home in isolation or in an environment with social contacts. Eventually 35% of the workforce will work in the home. While this phenomenon might increase isolation, it might also lower stress and the number of accidents on highways, thereby affecting the death rate and casualty underwriting standards in North America.

Conclusion

A new civilization is dawning! We are witnessing unprecedented changes in lifestyle, leisure, labor, and learning. Continuing to apply rules of the 1950s, 1960s, and 1970s might be counterproductive. We must extract risks from new trends and relevant conditions in order to again be able to predict in a changing world.

Carolyn Pitts Corbin has her BA and MA degrees in psychology and business from North Texas State University. She is President of Carolyn Corbin, Inc., an international research, training, and consulting firm.

Nonroutine Actions of the Board of Governors, May 27, 1987 – New York City

1. The Board approved a policy to reimburse expenses of Officers, Board or Committee members under circumstances involving unusually frequent meetings, particularly important (to the Society) assignments or circumstances where members' expenses are not reimbursed by a member's employer.

2. The Board approved retention of the law firm of Peterson, Ross, Schloerb & Seidel to review the activities of the Society in order to limit possible exposure of our membership to litigation.

3. The Board received a report that the vote by the members on the proposed constitutional amendment with regard to the office of the Director of Publications had been 2,076 in favor and 74 against. Since the Constitution requires a majority of 2/3 of those voting, the amendment carried.

4. The Board approved the Executive Committee recommendation of a task force, appointed by the Council of Presidents, to explore the structure of the organization of the actuarial profession with a view to strengthening the profession, and it authorized the President to appoint two representatives to such a task force.

5. The Board authorized the exposure to the membership of a revised draft of life insurance company valuation principles developed by that committee.

6. The Education and Examination Committee reported that it would implement the Flexible Education System for Fellowship examinations beginning with the November 1988 examination.

7. The Board approved the report of the Committee to Recommend New Disability Tables for Valuation and authorized its submission to the NAIC for consideration as the valuation tables for group long-term disability products.

8. The Board authorized the new Investment Section to collect dues.

Richard V. Minck
Secretary
May 1987

Editorial

A Time for Planning

by Linda B. Emory

Spring and summer are the times insurance companies participate in the management process that reaffirms or revises their strategic plan. It is a time to break away from day-to-day crisis management and to reset one's long-term aim — before the fall exercise in detailing the 1988 plan.

In this process, we look to what's happening in the external environment that will affect our business. We need to hear from people outside our industry like Carolyn Corbin (see her article beginning on page 1), and from people inside our industry like Lynn Merritt, President of L.O.M.A., who spoke at the Pacific Insurance Conference on "Strategies for Managing the Unforeseeable," and Dr. Kenneth Black, Jr., Regents Professor of Insurance, Georgia State University, who spoke in Tokyo, Japan, at The Research Institute of Life Insurance Welfare, on "The Future of the U.S. Life Insurance Industry."

Many keynote speakers on the future of our industry are our own members — Harold Ingraham spoke at the A.C.L.I. Investment Management Seminar on "The Life Insurance Industry in 1992"; Peter Walker presented "Leadership and Renewal — the Challenges Facing Life Insurance CEO's" at the A.C.L.I. Executive Round Table; and James C.H. Anderson gave "How We Got Where We Are Today... Where Do We Go From Here" at the LIMRA Annual Meeting last fall 1986. (Quotations in this editorial are taken from the preceding references.)

In their writings and presentations, these authors and speakers agree the insurance industry has experienced unprecedented change and that we must plan for continued turbulence in the foreseeable future. "These are the opportunity years, but not for the faint hearted," says Jim Anderson. He believes that to survive and succeed, "Most companies require new strategic initiative."

Ken Black notes the increasing globalization of financial services: from deregulation in the United Kingdom in 1986 — and the ability of one insurer licensed in the European Community (EC) to do business in another EC country — to the increased deregulation in Canada, to the partial opening of Japanese and other Asian markets. He remains confident in the prospects for continuing growth in the relatively "mature" U.S. life industry primarily due to increases in the number of U.S. households. Black noted the profound recent changes in U.S. products and pricing concepts. The new interest-sensitive products are complex; require sophisticated systems which create the need for additional capital investment and skill in managing technology; and have set the tone for a more competitive environment, replacements, and a squeeze on product profits. He notes that many companies are too small to have the managerial or financial resources "to meet the demands of the more competitive environment." The high distribution costs are a point of vulnerability for our industry. Black states, "Many companies have tried to meet the need for greater sales force productivity by market segmentation.... Competition for sales at the upper end of the income spectrum...seems to have reached a point of diminishing returns."

Lynn Merritt comments, "The insurance industry faces changes brought on by competition from other financial institutions, in demands for new products, in growing complexity of automated systems, and in the regulatory environment." He believes management of the planning process, technology, and people are the keys to coping with the unforeseeable. "Planning is critical in three areas: responding to the external environment, maintaining a competitive edge, and maintaining financial stability," he says.

Harold Ingraham believes there are six significant forces of change which will impact the competitive equilibrium in the next several years: 1) possible financial services deregulation; 2) demographic trends as America ages and the number of Asian and Hispanic immigrants grows; 3) AIDS; 4) modification in the distribution system to more leveled commissions, rebating, and producer-owned reinsurance companies; 5) possible regulatory changes to tax the inside build-up and single premium life and possible repeal of McCarran-Ferguson; and 6) surplus adequacy and solvency concerns stemming from the challenge to control the C-3 risk through both traditional and new investment vehicles and to optimize results to support the aggressive product pricing. Ingraham sees tomorrow's winners as those maintaining competitive advantage through 1) superior cost fundamentals; 2) preferred access to markets or distributors; 3) product/service differentiation which increases the chance of profit realization; 4) sharp focus — leading to cost efficiencies or differentiations; 5) superior implementation; and 6) merger or strategic acquisitions which result in economies of scale.

Jim Anderson dramatically states that companies have "four groups of strategic options...according to their intended or likely outcome." These are: 1) continued independence for those who can establish sustainable competitive viability based on superior cost fundamentals or on price and commission competitive avoidance; 2) merger of equals either to improve financial results or to change for the better the nature or scope of the business; 3) dressing up for sale or acquisition by another party; or 4) doing nothing and slowly and painfully declining with the eventual outcome of sale or acquisition on unfavorable terms.

On the implementation front, Peter Walker sees the challenge for the CEO to 1) understand product profit economics; 2) rationalize distribution channels; 3) attack costs; 4) address the changing investment requirements; 5) broaden competitive horizons; and 6) balance strategy and execution in the group health line.

We hope our companies have done a good job of developing a strategic initiative which will respond to how the environment may be expected to impact them. We can be sure there will also be the unexpected. These are the best of times; these are the worst of times. Change is challenging, exhilarating, and nervewracking.

An Answer to the Loan Dilemma

by John W. Keller

The phase-out of the deductibility of policy loan interest as a result of the new tax law is creating problems for both policyowners and life insurance companies. Policyowners, who purchased life insurance on minimum outlay payment plans that depended on the deductibility of policy loan interest, may now find themselves holding policies that require increasing cash outlays each year and provide decreasing death benefits. Companies are finding that policies with large policy loans are very vulnerable to replacement by either their own or some other company's universal life policy.

Northwestern Mutual is attacking this problem vigorously in a program we call "Fresh Start." Through it we provide our agents with the ability to demonstrate to their policyowners — via illustrations of inforce policies — the long-range effects of three possible courses of action. It is up to the policyowner — with the help and advice of the agent — to decide which course of action is best.

The first choice, and the simplest, is to keep the loan as it is. Even when policy loan interest is not deductible, a policy loan is still a pretty good deal. For a typical participating policy with direct recognition, the spread between the loan interest rate and the borrowed dividend interest rate is not that large.

Repaying the loan may also look attractive to a policyowner in today's economic environment. If the policyowner has funds invested at 8, 9, or even 10%, it may be very attractive to use those funds to repay the policy loan. Our current dividend scale will pay a competitive rate on those funds with no taxes on the earnings until or unless the policy is surrendered.

For those who are convinced that they do not want to keep their policy loans and do not have the funds to repay the loans, we are offering a third option which, although similar to an internal replacement, is actually quite different. We will offer to restructure the policy — via policy change — to a new contract which we have developed and called Inforce CompLife® The policy will retain its original policy date and policy number. It will also retain its original policy loan interest rate, whether that is 5, 6, or 8%.

Inforce CompLife® is made up of paid-up additions and level-premium, participating term insurance. The cash value of the existing policy is used entirely to purchase paid-up additions. The balance of the coverage desired is made up of term insurance. Dividends are used to buy paid-up additions which decrease the term insurance amount each year. The premium for the policy is made up of a premium for the term insurance and, if desired, level additional premiums which are payable annually and used to purchase more paid-up additions. Paid-up additions purchased by additional premiums can be used either to reduce the term coverage or to increase the total death benefit.

Most policyowners will find that they can change to Inforce CompLife® for an amount that is the same as or higher than their present coverage for their current premium amount. No underwriting will be required for a change to Inforce CompLife® if no increase in coverage is requested. Increases in coverage will be underwritten.

The design of Inforce CompLife® is similar to the CompLife® design available for new sales, but differs in two significant respects. First, it does not charge the insured for new, first-year-issue expenses or new first-year commissions to the agent. Hence the policyowner avoids the heavy first-year charges associated with a new policy. Second, Inforce CompLife® reflects the duration of the original policy when determining dividend mortality charges for a continuation of present coverage. If the policy contains increased coverage with new underwriting evidence supplied, the dividend mortality charges will reflect a newly select mortality for the increase. In this way, we preserve equity in mortality for our entire block of inforce policies, whether or not they elect to change.

Offers to make changes to Inforce CompLife® will not be mailed directly to policyowners from the home office. Rather, we will furnish agents with computer-selected lists of their policyowners who are most likely to benefit — those with large loans, measured both in absolute dollars and in percent of cash value. Agents then can order inforce ledgers illustrating what would happen to the policy with or without the change. The changes will be handled in the home office by a special unit which will do nothing but these types of policy changes. That unit will be aided by a very sophisticated computer system that handles all the policy change calculations, record changes, and printing of the new policy. This system, developed specifically for this project, will have long-range benefits for the company in that it will eventually facilitate many other types of policy changes.

Agents receive a one-time service fee for helping their client to make a change to Inforce CompLife® Only increases in premium involved in the change receive normal, first-year commissions.

As part of the change to Inforce CompLife® the policyowner has the option of eliminating any policy loan or carrying it forward. If the policy has not built up a taxable gain, then the loan can be eliminated as part of the policy change without any adverse tax consequences. However, if there is a gain in the policy, the policyowner may want to carry the loan over to the new Inforce CompLife® policy rather than eliminating it and having to pay tax on the gain.

As a company, we are very excited about this project. The special policyowner service unit is in place now, and it is expected to be in operation throughout 1988. Agent interest is very high, and we expect to change between 50,000 and 100,000 policies before the program ends.

John W. Keller is Managing Actuary at Northwestern Mutual Life Ins. Co. He is a member of the Section 7702 Task Force of the ACLI.

Who is this Creature Called an Actuary?

by William C. Cutlip

At the Boston Society meeting in 1986, Nancy Austin, co-author of *A Passion For Excellence*, shared concepts and stories which have allowed people to successfully manage for excellence. There was such a ground swell of response that a seminar on the same theme was presented at the Colorado Springs meeting this year.

This "Managing for Excellence" seminar was designed to focus specifically on the needs of actuaries—technically educated professionals who want to expand their horizons and grow to become solid business people and managers.

Good managers have two definite sets of skills: technical knowledge of their field and the ability to get things done by and through other people. Actuaries already are trained in the technical skills. The goal of this and future seminars is to develop those skills which involve other people.

At Colorado Springs, the concept of personality types was introduced. The aim of the seminar was to create for each participant an awareness of his or her own type, how to recognize the knowledge of other types, and then present some tips on how to use that knowledge to get results. The group also considered case studies.

In true actuarial fashion, the session started with a test. It was a modified version of the Myers-Briggs personality type test. Each participant chose from a list of characteristics those twelve which most nearly described him.

Each characteristic was then thrown into a grid which indicated 1) how a person would perceive situations and people, 2) how judgments would be made, and 3) what personal style would be used. These personality traits and the approach to perception, judgment, and style became the focal point for the discussion to help the group understand more about involvement with people.

The approaches to assimilating information and making decisions can be at opposite ends of the spectrum. Perception, the way in which a person finds out what's going on, is developed through a combination of using the senses and using intuition. *Sensors* prefer to rely primarily on facts or happenings observable through the senses. *Intuitors* prefer to rely primarily on meanings, patterns, or possibilities beyond the reach of the senses.

Judgment describes the process by which people decide things. *Thinkers* make decisions using an impersonal analysis based on logic and cause-and-effect. *Feelers* use a personal analysis based on personal or social values.

Style is measured by whether a person prefers to approach things as an *Extrovert*, focusing primarily on people and things around him, or an *Introvert*, focusing primarily on the concepts and ideas inside his head.

With this information, each actuary knew a little bit more about him or herself. The group then looked at other people's traits and how one could guess what type those people were, how people would act in certain situations at work, and how they might successfully interact with others.

The personality test results were collected from each of the participants so that the information could be used to determine the content of future seminars.

The results were tallied and revealed that the twelve most frequently chosen characteristics of the group were, in order: 1) Intelligent, 2) Analytical, 3) Dependable, 4) Conscientious, 5) Logical, 6) Responsible, 7) Open-minded, 8) Practical, 9) Realistic, 10) Independent, 11) Reliable, and 12) Cooperative.

These characteristics were used to determine the personality type of a creature I'll call the "composite actuary." This composite actuary is one who prefers to approach perceptions of things through the *senses*, who prefers to make judgments based on *thinking*, and who, stylistically, slightly prefers to do this through *ideas* rather than through *people*. In short—a sensing, thinking introvert, as would be expected. We hope the actuaries who are of this type will learn to recognize the value of persons who have the opposite characteristics—intuitive, feeling extroverts.

The response to the seminar was overwhelming. It was the most highly attended session at the meeting, indicating that there is a real interest on the part of actuaries to grow and expand from their technical base.

As a result, further management sessions have been planned for the spring meetings next year, both in Louisville and Boca Raton. A session on "Project Management" will be held in Louisville. A session on "Handling Change" will be introduced in Boca Raton. A half-day seminar entitled "Oh How I Hate The Annual Review!" will be offered at both sessions. Watch for your upcoming announcements of the spring programs for a fuller explanation of each topic.

William C. Cutlip is Vice President and Actuary of General Life Ins. Co. of Wisconsin. He is a member of the SOA Program Committee.

Society Office Now Has Elizur Wright's Famous Arithmeter

by E.J. Moorhead

In July 1987, one of the few surviving "Arithmeters" invented by our famous Massachusetts forebear Elizur Wright successfully made the journey from New York to our headquarters in Itasca, Illinois, where it is to be suitably encased as a permanent exhibit. This is the story of that instrument.

Elizur Wright (1804–1885) built this machine, mostly, it is said, with his own hands, to expedite the thousands of calculations made necessary by the landmark legislation that he himself had drafted to require that the Massachusetts Insurance Department compute net level premium reserves on all policies in force in

Continued on page 9 column 1

Arithmeter cont'd.

domestic and out-of-state life companies. Wright was Insurance Commissioner from 1858 until his ouster by some of his many foes in 1866.

In 1869 Elizur's son Walter (1846–1917), then actuary of New England Mutual and later a charter member of the Actuarial Society, requested his father to patent the device, and then announced its availability for purchase at a $600 price. In 1914 Walter Wright remarked that only fifteen or sixteen instruments were ever manufactured and sold; he recollected that the market for Arithmeters was destroyed by the invention of the Arithmometer, which could be produced more cheaply and was a mechanical calculator, as opposed to the Arithmeter's slide rule principle. At least three Arithmeters still exist — one each in the home offices of the New England Mutual and Northwestern Mutual, and now one (#14) in the Society office.

Instrument #14 was owned by Augustus F. Harvey (1830–1900), who was actuary of the Missouri Insurance Department from 1870 until his death and was elected a member of the Actuarial Society in 1890. In 1914 his son, Julian C. Harvey, F.A.I.A., gave the machine to the then president of the Actuarial Society, James M. Craig, Actuary of Metropolitan Life, who immediately stated his intention of presenting it to the Society. This gift seems not to have been formally made at that time; though the Arithmeter remained at Metropolitan Life, it was identified as Society property.

Physical transfer apparently took place in 1940 when the Society office was at the home office of the Equitable Society, 393 Seventh Avenue, New York City, but the Society's one employee did not welcome it; she is reported to have moaned, "I don't know what we will do with it!", and left it unprotected on top of a bookcase. Metropolitan Life's actuary, Horace R. Bassford, kindly solved that problem by offering to house the artifact in the planned Craig Memorial Library at Metropolitan Life. Actuarial Society Secretary Walter Klem obtained authorization for this friendly loan, as reported in the Society Council minutes of October 29, 1940, "until such time as the Society might provide a suitable place of its own."

The successive actuaries and curators at Metropolitan Life have kept splendid care of this artifact, which one of them in 1940 described as "this museum piece, the historical starting-point of the mechanization of the American life insurance business." Today's Society headquarters provides indeed the suitable place that was forecast nearly half a century ago.

Three descriptive pieces on just what functions the Arithmeter was designed to perform and in what manner it worked are known to exist. They will be summarized in a subsequent issue of *The Actuary.*

E.J. Moorhead is a Past President of the SOA. He is presently working on a comprehensive history of the actuarial profession in North America to be published in conjunction with the 1989 Anniversary Meeting to be held in Washington, D.C.

Financial Accounting Standards No. 87 —A Survey*

by Barnet N. Berin

Statement of Financial Accounting Standards No. 87, *Employers' Accounting for Pensions*, was released in December, 1985, culminating an effort that began in December of 1974 and took many turns. The final version covers what amounts to an accounting/actuarial standard with significant income statement and balance sheet implications. It is a difficult document, for both professions, since it freely mixes and adapts from each. For others, it can be mind boggling.

Survey

While there were certain exceptions, FAS 87 was required beginning with calendar year 1987 financial statements. Earlier application was encouraged. To find out about FAS 87 results, companies voluntarily complying in 1986 were sampled in 48 Mercer-Meidinger-Hansen offices in the USA in order to investigate the choice of certain assumptions and the relationships between the resulting pension expense and the range of IRS tax-deductible contributions. The following discussion will be of particular value to those who have participated in FAS 87 determinations of pension expense.

There were 307 companies included in this survey with a total market value of pension assets of about $17.6 billion in mid-1986.

Interest Rates

The three basic interest rates essential to understanding the significance of FAS 87 are the assumed valuation interest rate, the discount rate and the expected long-term rate. The assumed valuation interest rate is, of course, the interest rate used in the regular actuarial valuation of the pension plan. It is used to calculate tax-deductible contributions and is included for comparison with the other two rates. The discount rate is used to calculate the present value of liabilities and normal costs for FAS 87, while the expected long-term rate is used to calculate the expected return on plan assets.

The discount rate is intended to be a current rate at which pension benefits could be settled. Possibilities for determining this rate include a current annuity buyout rate, current PBGC rates, a long-term bond rate reflecting high-quality securities with a term similar to the period over which benefits will be paid. These alternative bases encompass a fairly wide range of acceptable rates at any given date. The expected long-term rate is to reflect the average rate of earnings on funds invested or to be invested.

Based on the sample, the interest rates used by the companies were:

Interest Rate	Average
Assumed Valuation Interest Rate	7.63%
Discount Rate	8.56%
Expected Long-Term Rate	8.63%

In this first full year in which FAS 87 could be applied, it is interesting to note that the discount rate and the expected long-term rate were nearly the same and the assumed valuation interest rate was about one percent less.

The last two interest rates, combined with the projected unit credit funding method and complex amortization rules, are used to produce a pension expense which may affect balance sheet assets and liabilities as well.

Tax Deductions

Comparisons of pension expense were made with the range of IRS tax-deductible contributions disclosing that only 15 percent of the companies developed a pension expense greater than the minimum, but less than the maximum or within the tax-deductible range. With 85 percent of the companies sampled producing a pension expense, per FAS 87, outside of the IRS tax-deductible range, the distinction between the actual contribution made to the pension fund and the amount charged to the company for accounting purposes, the pension expense, is emphasized.

Of the companies falling outside of the range of tax-deductible contributions, almost 71 percent of the total sample were below the IRS minimum while 14 percent were above the IRS maximum. Of the 71 percent below the minimum, 16 percent were below the minimum but produced a positive pension expense. The other 55 percent were below the minimum and produced a negative pension expense, so that pension expense literally became pension income. Presumably, the anomaly of an expense becoming income is due to its "over-funded" status measured by FAS 87, but this is a function of the discount rate which most observers consider to be volatile from year to year. This rate is selected anew at each measurement date and is almost certain to change.

Problems

Many of those who spoke before the FASB, prior to the adoption of FAS 87, mentioned the possibility of the pension expense being outside of the tax-deductible range, pointing out that this could create problems. Longer term such differences cannot prevail: a pension expense consistently outside of this range could hardly fund a pension plan in a rational manner and therefore not represent a reasonable expense. With several "permissable" pension expense and contribution numbers available (IRS and FAS 87), there may be a tendency by plan sponsors to prefer the lower amount and actively seek ways to accomplish this. Such reactions would weaken plan funding and lessen employee security. In addition, such differences cast doubt on the usefulness of pension reporting in financial statements.

Amortization

As part of this study, the amortization periods used in these calculations were examined: the average was 16.0 years. This is, of course, much more rapid amortization than the 20-30 years common in determining pension contributions over recent years.

Conclusion

Now that the FAS 87 pension expense is mandatory for most companies in the USA, it remains to be seen how results such as those disclosed in this survey will affect future pension expense accounting. To the extent that pension expense for financial statement purposes diverges from pension tax-deductible contributions actually made to the pension fund, the appropriate level of contributions will have to be reexamined by all parties so as not to mislead nor affect benefit security.

Barnet N. Berin is Managing Director-Chief Actuary at William M. Mercer-Meidinger-Hansen, Inc. He is an Associate Editor of *The Actuary* and a member of the SOA Board of Governors.

* *Reprinted with permission from the* Mercer Bulletin, *August 1987, No. 146.*

The Military Retirement Reform Act of 1986

by Toni S. Hustead

The military retirement system is a funded, noncontributory, defined-benefit plan that includes nondisability retired pay, disability retired pay, and survivor annuity programs. The Service Secretaries approve immediate nondisability retired pay at any age with credit of at least 20 years of active-duty service. Reserve retirees must be 60-years-old with 20 creditable years of service before retired pay commences. There is no vesting before retirement. Currently, there are 2.2 million active-duty members, 1.1 million Selected Reservists, 1.4 million retirees, and 0.1 million surviving families in the system.

The Military Retirement Reform Act of 1986 created new retirement benefits for military personnel who first became members of the Armed Services on or after August 1, 1986. Consequently, there are now three distinct nondisability benefit formulas (for three distinct populations) within the military retirement system.

Military personnel who first became members of the Armed Services *before September 8, 1980*, have retired pay equal to (final basic pay) times (years of service), and the benefit is limited to 75% of final basic pay. If the retiree first became a member of the Armed Services *on or after September 8, 1980*, the average of the highest 36 months of basic pay is used instead of final basic pay. This represents an average 13% reduction in benefits for this group when compared to the "final pay" members. Benefits for members first entering the Armed Services *on or after August 1, 1986*, are reduced if they retire with less than 30 years of service. At age 62, their retired pay is recomputed without the reduction. The average benefits of these newest members are 17% lower than the September 1980 – August 1986 cohorts and 27% lower than the pre-September 1980 cohorts.

Retiree and survivor benefits are automatically adjusted annually to protect the purchasing power of initial retired pay. The benefits associated with members first entering the Armed Services before August 1, 1986, are adjusted by the percentage increase in the average Consumer Price Index (CPI). This is commonly referred to as full CPI protection. Benefits associated with all other members are annually increased by the percentage change in the CPI minus 1%. At the military member's age 62, the benefits are restored to the amount that would have been payable had full CPI protection been in effect. However, after this restoral, partial indexing (CPI minus 1%) continues annually.

It will be 20 years before the Military Retirement Trust Fund disbursements are noticeably affected by the new benefit reductions. However, the Department of Defense budget (which includes only the aggregate entry-age normal cost payments as a percentage of basic payroll) will be affected much earlier. More than 13% of the total active-duty force of 2.2 million military personnel are new entrants in any one year. Each year 50% of the total basic payroll is associated with members with less than seven years of service. Consequently, 50% of the total normal cost payment will be related to the new reduced benefits by 1993. The normal cost payment in 1993 will be $2 billion (8%) lower than it would have been before the 1986 retirement reform package.

Policymakers will be carefully watching the recruiting and retention of future new entrants. The 13% reduction implemented in 1980 has had no noticeable impact on force management. However, the total compensation system of the military is a complex system of pay and allowances making the effect of cutting benefits in one area difficult to analyze.

Toni S. Hustead is Chief Actuary at the Department of Defense. She has been a contributor to the *Transactions* both as an author and a discussant.

Election Results Tabulated

The election results for Officers and the Board of Governors for 1987–88 have been tabulated. Ballots were sent to 5,832 Fellows. The number of valid ballots returned was 2,660, or 45.6% of the total sent out. The Society of Actuaries is pleased to announce the following winners:

President-Elect:
- Ian M. Rolland

Vice-Presidents:
- Michael B. McGuinness
- R. Stephen Radcliffe
- Irwin T. Vanderhoof

Secretary:
- Anthony T. Spano

Treasurer:
- Michael J. Cowell

Board of Governors:
- Thomas P. Bleakney
- Yves G. Guerard
- C.S. (Kit) Moore
- Bartley L. Munson
- Harry H. Panjer
- John B. Yanko

These new officers and members of the Board of Governors will assume their positions at the end of the closing General Session at the annual meeting in Montreal, October 18–21, 1987.

1987 Annual Meeting Exhibit Program Available

If you are unable to attend the 1987 annual meeting but would like to benefit from the many exhibits held at the meeting, send $6.00 to the Society office, Attention: Librarian, for a copy of the exhibit program. This program lists the names and addresses of all exhibitors at the meeting and describes their products and/or services. About 60% of these exhibitors have computer software for the actuarial profession. The other 40% offer consulting and reinsurance services. Copies of the exhibit program will not be sent until payment is received in full.

Dear Editor:

Macaulay Duration

Research has shown that the use of Macaulay durations can produce seriously inaccurate information about C-3 risk when assets or liabilities are interest sensitive. In recognition of this fact, the New York State Legislature has passed a bill which will remove all reference to Macaulay duration from New York Reg. 126.

Chapter II of the *Valuation Actuary Handbook* discusses the deficiencies of the Macaulay duration in some detail. Additional information on effective methodologies for measuring and managing C-3 risk exposure are contained in the *Proceedings* of the annual Valuation Actuary Symposia.

All actuaries concerned with interest-rate risk for interest-sensitive products should be aware of the deficiencies of the Macaulay approach and familiarize themselves with the better methodologies.

Gary Corbett

Actuary of the Future

The Actuary supplement from the Committee on Planning triggered several ideas for me that I'd like to share.

If I had received similar comments about the quality of my company's Field Force, we would first study *recruiting* and then *training*. Perhaps we need to recruit more natural leaders with a strong mathematical aptitude, rather than try to make leaders out of all of our technical actuaries.

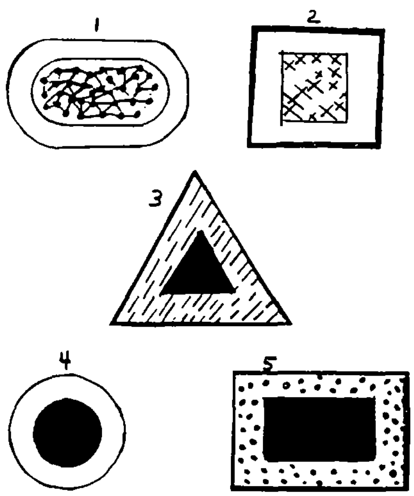
I am reminded of one FSA company president who was captain of his high school baseball team, president of his senior class, all-city first baseman, and who turned down an appointment to West Point in favor of an actuarial scholarship.

Perhaps we should focus our recruiting at the high school level on natural leaders! Of course, retraining the old guard will help some.

James L. Lewis, Jr.

In the May issue, writing on the "uniqueness" of the actuarial profession, David Wright states, "The value of the actuary lies in the integration of his well-refined skills and perspective with those of other professionals on common problems which transcend our overlapping functional areas."

Consider the following five figures, each with a unique shape and with inner and outer "characteristics." Of the five, which is the most unique? I offer that the solution is analogous to defining the actuary's role vis-à-vis the several professions with which we share common problems.



Solution: Number 4 is the most "unique." The reason can be stated in two different ways:

1. It shares either an inner or outer characteristic with the remaining four figures, or
2. It has neither a unique inner nor outer characteristic!

Simply stated, uniqueness need not rely on sole possession of a single quality or skill but rather is more aptly defined by the particular combination of those present.

Michael E. Swiecicki

FES

I assume that our initial experience under FES will be evaluated. I see at least two problem areas. First, how can you adequately test a student's knowledge during a one-hour exam with 10 to 12 questions? Rumor has it that one student put down AABBCCDDEE for his 10 answers and passed with a six.

Second, one of the goals of FES was to maintain or shorten the current travel time to Fellowship. A rough look at the Parts 3 and 5 number lists indicates that about 5%-10% passed the entire exam instead of the current 30%-40%. As one student put it, "Instead of passing 10 exams, I have to pass 30. It's comparable to attempting to get a bachelor's degree from a college that fails at least half of the students in each of its courses." This is enough to discourage anyone from entering the profession.

I hope that matters such as these will be exposed to the membership before the Fellowship phase of FES is implemented.

Martin R. Claire

Valuation Actuarial Report

John O. Montgomery (*The Actuary*, June 1987) makes the laudable suggestion that a comprehensive actuarial *report* replace the statement of actuarial *opinion* presently required by the NAIC Annual Statement Blank. While I agree wholeheartedly in *theory*, I would like to raise two *practical* objections to this proposal.

First, I believe that actuarial effort is much better spent on sound product design and risk selection than on dealing with the reserving mess that results from inadequate attention to these areas. Mr. Montgomery could do more to ensure the ongoing financial stability of life insurance companies by, for example, working vigorously to give them the right in all jurisdictions to ask underwriting questions on AIDS and to test for the presence of antibodies to this virus than he ever could by forcing hundreds of actuaries to write reserve reports.

Second, this proposal would add significantly to the cost of carrying on a life insurance business. Small companies in particular would have difficulty furnishing the necessary resources to get the job done, and their competitiveness vis-à-vis the giants would erode yet further. I believe Mr. Montgomery's proposal should be accompanied by a plan to *subsidize* the increased regulatory burden, most logically through some form of premium tax relief.

Paul E. Buell

Actuarial Density

In response to Robert L. Brown's search for the city with the greatest actuarial density in North America (April 1987 *Actuary*), we submit Montpelier, Vermont.

There are 11 active Society members who call Montpelier home. The population of this beautiful New England city is 8,280. This leads to a lofty actuarial density of 1.33 per thousand!

Garth A. Bernard

To Unify...

Getting AAA, ASPA, CAPP, CAS, and SOA all to agree on a plan of reorganization may again prove to be as difficult as it was ten years ago. One of the first steps needed is to clearly define the major purpose and objectives of any reorganization.

Lambert Trowbridge's editorial in the June 1987 issue of *The Actuary* suggested a series of small steps to be taken rather than one giant step. That approach would certainly increase the chance for success.

His suggestion of merging CAS and SOA certainly has merit. Those two organizations currently cooperate on examinations. Individual life, health, annuity and employee benefit actuaries can change the areas in which they specialize if they are FSAs or ASAs. A merger would increase their flexibility to include property and casualty. An even greater expansion of opportunity would occur for FCASs and ACASs.

However, the purpose of this letter is to suggest what I consider a much more important first step, involving the merger of the Society of Actuaries and the American Academy of Actuaries.

Some early 1987 membership statistics indicate the size of these organizations:

SOA	10,284
AAA	8,418 (6,325 are in SOA, 931 are in CAS, 171 are in CAPP, and 991 are in none)

The merger of SOA and AAA would be a merger of equals—and is in my view the major area in which there is duplication of expense and turf issues. The "sometimes competing organizations" referred to in the June editorial is an understatement. The actuarial profession in the U.S. would be stronger today had the Society of Actuaries changed its charter in 1965 to a national charter. Instead the American Academy of Actuaries was created.

There is a need for two strong cooperative national actuarial organizations that are not hampered by the existence of the very powerful international body called the Society of Actuaries.

One possibility would be to name the merged U.S. national organization the Society of Actuaries. Existing FSAs and ASAs would still retain their current designation. New FSAs and ASAs would need to meet current requirements. Within the national Society of Actuaries there could be sections. However, a new section could be called the American Academy of Actuaries, and the requirements to be a member of that section would be the same as today to be a member of the American Academy of Actuaries. It could also have an Enrolled Actuaries section. It would therefore be possible to be a member of the national Society of Actuaries, and not be an FSA or ASA.

Using the previously stated statistics, the new organization would have 12,377 members, each with one or two professional designations. (See chart below.)

If we had an Enrolled Actuaries section, there are 589 of the 3,920 EAs who are not currently members of either AAA or SOA who might also join—although they can join AAA today.

Dues for AAA in 1988 will be a little under $1,500,000, and dues for SOA will be over $1,500,000. The actuarial profession could more effectively utilize the $3,000,000 if it went to one organization which would be directed by one Board.

I hope the suggestion made in this letter will be viewed as an effort to strengthen the effectiveness of the actuarial profession in North America.

Donald R. Sondergeld

	Current Membership	Professional Designation in the new SOA
6,325	SOA members of AAA	MAAA & FSA (or ASA)
3,959	SOA members, but not members of AAA	FSA (or ASA)
2,093	members of AAA, but not members of SOA	MAAA
12,377		

...or Not to Unify

It seems to me we are wasting time and energy trying to develop a unified SuperSociety. Most of the letters and other material I have read favoring such an effort seem to be preoccupied with form rather than substance. Various groups have evolved over time in response to specific needs, in a very natural way. If memory serves me correctly, a little over twenty years ago we formed just such an organization as is now being discussed, called the American Academy of Actuaries. Fortunately, the other organizations refused to die.

There is good reason for the continued existence of the other organizations. People with similar interests tend to band together for the common good. This is often done to fill an existing void. Frankly, I feel it is very healthy to see the somewhat differing perspectives that come from the various actuarial organizations. The existence of these organizations fosters a wider spectrum of discussion and opinions and involves more people in the process. This diversity helps keep us from becoming too ingrown. Personally, I like having a selection of annual actuarial meetings, with somewhat differing content, to choose from. Too much unification would tend to limit our perspective. An overly structured profession seems to me to emphasize form for form's sake.

If we want to enhance the influence of our profession, let's do it by more carefully defining the mission and objectives of the existing groups and by encouraging quality performance from those groups in whatever direction they take. Let's also allow the Academy to perform what I believe was its original function, to represent the profession as a whole before the public and increase our overall level of influence in general.

George S. Ling

Replacement from the Consumer's Side

Your editorial on replacement in the May 1987 issue of *The Actuary* stimulated these thoughts on replacements. It is commonly stated that a replacement involves a full additional issue cost. For the industry as a whole, of course, when a policy is replaced, two acquisition costs will be paid, with most of the acquisition costs of the

Continued on page 14 column 1

Continued

first policy unrecoverable by its issuing company.

However, from a consumer's viewpoint, all replacement comparisons must be looked at prospectively. Since most companies amortize acquisition costs over a long period, after two years, a policyholder of a company with 20-year amortization has "paid" less than 10% of the initial charges, with the remaining 90% yet to be charged.

With such a small difference in the amount of future acquisition charges between the in-force policy and its proposed replacement, it doesn't take much of a difference in other factors such as interest rates to make the replacement seem attractive to the customer.

An insurer which is concerned about replacement of its policies could try to amortize initial costs more rapidly, but a limit to this is soon reached beyond which the competitive position of the company's policies will be eroded.

John A. Fibiger

It Must be Something in the Water...

North Side High School in Fort Wayne, Indiana, probably holds some kind of record by having three graduates who are now FSAs and CEOs of life insurance companies. They are David Carpenter, of Transamerica Occidental, Ian Rolland, of Lincoln National, and me, of John Hancock.

E. James Morton

My class (Harvard '58) produced three Fellows in addition to me: John Biggs, Dave Lively and Dick Sears. Dick never graduated, but was the first Fellow among us (1960). Considering his present position with Kwasha, apparently his lack of a Harvard degree did not stand in the way of his advancement.

Finally, I note that none of us are life company actuaries.

James B. Germain

In Memoriam

Walter Du M.M. Facer A.S.A. 1960
Richard S. Frese F.S.A. 1976
Ernest R. Heyde F.S.A. 1959
Joseph F. Sullivan A.S.A. 1961

"Tennis Anyone?"

Could you pose the following problem to the readership of *The Actuary*? So far I've tried *Tennis Magazine* and my local tennis clubs and professionals to no avail.

I am trying to obtain a mixed doubles rotation for 6 male/female couples which satisfies the following conditions in order of importance:

1. There are 6 rounds.
2. Each individual plays with every member of the opposite sex once.
3. Each individual plays against every member of the opposite sex exactly once.
4. Each individual plays against every member of their own sex once and against one of their own sex twice.

I have some rotations which achieve the first two criteria, but don't achieve #3 and #4. For the last two years when our neighborhood tennis group has tournaments, there are always a handful of complaints because certain individuals play against some of our better players more than once.

Can you help me? I can be reached at my *Yearbook* address or phone number.

John W. McKee III

Exam Seminars

Exam preparation seminars for Exams 120 to 150 will be offered in various locations for the November 1987 exam session. For information, please contact Prof. S. Broverman of the University of Toronto at his *Yearbook* address.

U.S. Bureau of the Census Fourth Annual Research Conference

The Bureau of the Census is planning its Fourth Annual Research Conference, to be held in March of 1988 in the Washington, D.C., area. The conference will consist primarily of discussions of contributed papers and will emphasize improvements in technology related to census and survey operations. For further information contact Ms. Maxine Anderson-Brown, ARC Conference Coordinator, Office of the Director, Bureau of the Census, Washington, DC 20233, 301/763-1150.

Valuation Actuary Handbook Selling Fast

If you are interested in receiving a copy of the *Valuation Actuary Handbook* and have not placed an order, please do so in the next few weeks. Our supply of Handbooks is fast depleting.

The success of this project is due in large part to the members of the Committee on Life Insurance Company Valuation Principles and the Committee on Life and Health Corporate Affairs, who worked behind the scenes to review, coordinate and edit the material included in the Handbook. Thanks go to Wayne Bergquist, Robert Hogue, Don Peterson, Steve Radcliffe (Handbook Editor), Robert Shapiro and Len Tandul. A special thanks also to all those authors who submitted material for the Handbook.

CoPAFS Moves its Office

The Council of Professional Associations on Federal Statistics (CoPAFS), of which the Society is a member, has the following new address:

CoPAFS
1429 Duke Street
Suite 402
Alexandria, VA 22314-3402

Its telephone number is (703) 836-0404.

But is that on the Inspection Report?

Susan Silverman sent us the following from *Punch* magazine: "Scientists and actuaries have defined the following things as being associated with longevity: living in the south-east of England, being Swiss, drinking half a bottle of red wine a day, not smoking, carrying out insider trading (unless caught), and not working for the BBC. Conversely, the following things have been found to be associated with a shorter life: living in the north-west, working for the Swiss, getting caught doing insider trading, and trying to work for the BBC. Of course, combinations are possible, e.g., it's bearable living in the north-west if you work for the BBC and drink a lot unless you're Swiss. And so on."

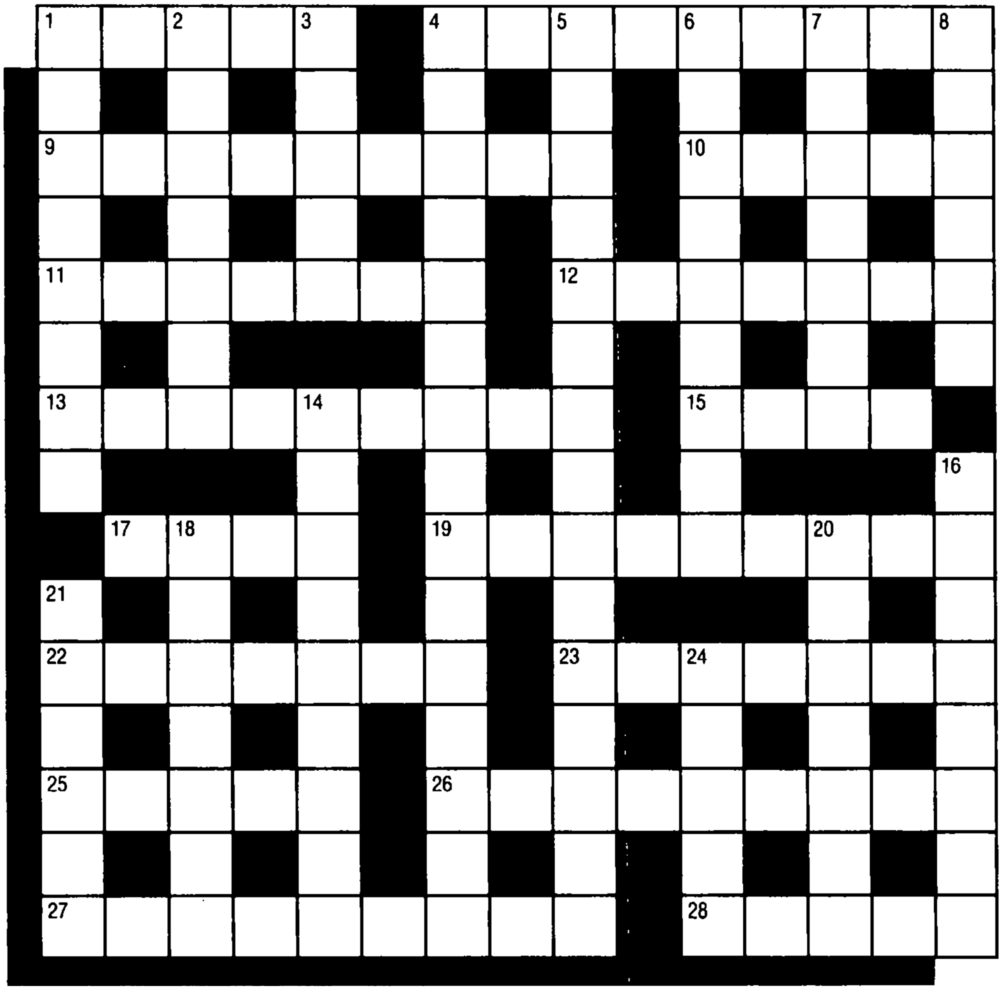
ACTUCROSSWORD

Across

1. Understand the figure? (5)
4. To gain time (English spelling), increase speed (9)
9. Better agree with brat: he could be a big star (5,4)
10. First with alphabetical range; could be worth a bit (5)
11. Derived from Austin—one in Africa (7)
12. Gangster of Sherwood Forest and chimney (7)
13. Other colors follow; it's for the birds (9)
15. For these, actuaries' acts are more precise than Shakespeare's seven(4)
17. State failure, not our one (4)
19. Loud, just shocking! (9)
22. See why a change of soft soap deceives (7)
23. This taches a new means of disturbing possession (7)
25. Presidents from Carlsbad, Amsterdam, and such places (5)
26. He is capable of drawing a farm stand (9)
27. Severance caused by changed age trends (9)
28. Passes to employees' groupings of cards (5)

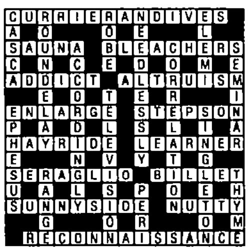
Down

1. Rin-Tin-Tin, Lassie and Sirius (3,5)
2. Picked up- at gale end, possibly (7)
3. Emperor in part it used to be called (5)
4. Cure from animal matter (3,4,2,3,3)
5. Peaceful-looking assembly raids the Navy arm in Massachusetts (7,8)
6. This is soap to the skilled manipulator (9)
7. Cause of action, i.e. slump (7)
8. Chemical transformation speeded by taking the last letter to Yemen (6)
14. Re-grouping of NASA teams in the South Pacific (6,3)
16. Philosopher's American design? (8)
18. Tax, nice but incorrect (7)
20. Sort of citizen that men fear (7)
21. Some chosen at election (6)
24. This is often with 28 and up overtake (5)



100% SOLVERS — ***June:*** J Abraham, W Allison, S Alpert, D Baillie, D Brown, S Colpitts, C Conradi, L Cralle, S Cuba, K Elder, B Fortier, C Galloway, E Goldstick, J Grantier, R Hohertz, A P Johnson, O Karsten (also March), R & J Koch, D Leapman, R C Martin, G D McDonald, H Migotti (May), R A Miller, B Packer, E Portnoy, R Reed & J Mair, B Rickards, J Schwartz, N Shapiro, R Weitzenkamp, A Whiton, DS (Anonymous) Williams.

September's Solution



Send solutions to: Competition Editor, 8620 N. Port Washington RD (312), Milwaukee, WI 53217

ACTUCROSTIC

A. Producing a desired result. — 28 159 216 151 230 11 49 74 121

B. Mates of bucks; accomplishes. — 23 123 167 233

C. Vividly bright and shining; gorgeous. — 211 57 150 6 174 30 114

D. Sound film strips, eg. — 164 44 64 149 97 204 80 242 219 182 10 133

E. Brazen; pushy. — 185 115 176 141 202 14

F. Arranged like mortality statistics, eg. — 218 119 27 134 46 195 70

G. Empty noggins. (2 wds) — 106 153 58 9 229 137 163 210 75 43 132

H. Useful in arriving at most actuarial values. (2 wds) — 25 190 1 214 98 207 142 222 171 130 39 177 59 77 108 232 51 155 89 13 117

I. Mazes; jungles. — 196 72 118 180 41 88 104 238 24 148

J. Not pleasing or welcome. — 235 124 32 86 181 103 18 197 65 160 76 29

K. Theory X superiors; tough bosses. — 107 68 168 2 146 33 129 79 201 17 239 93 53 189

L. Shut off your mixer—taste some candy. — 128 156 50 215 94

M. π, e and $\sqrt{3}$, eg. (2 wds) — 4 116 96 131 62 203 81 147 16 186 241 109 31 175 221 226 47

N. Possession; landholding. — 139 92 157 56 20 234 184 178 224

O. Beginning to develop. — 82 112 213 145 19 170 67

P. Matter of chance; shot in the dark. (4 wds) — 99 173 40 8 140 78 237 187 34 63

Q. Echoes; reverberates. — 100 15 125 143 200 45 179 228 166

R. Special spot where two parallel lines meet. (2 wds) — 71 192 35 127 172 206 161 52 212 7

S. Golf will net her most with the lowest score. — 5 198 208 48 225 194 236 240 120 154

T. Pandora's box; hornet's nest. (3 wds) — 113 42 90 22 83 188 158 220 135 183

U. Equality; A ≡ B . — 138 122 60 85 162 227 105 38

V. Conceited; cocky. (2 wds) — 136 84 95 111 205 26 217 61

W. Sheet of stationery. — 73 3 209 87 101 199 55 231 144 36

X. Irritate; rub salt on the wound. — 12 223 91 66 193 152 37 169 54 110

Y. Paul, Cloud, & Louis Park in Minnesota — 165 69 21 191 126 102

	1 H	2 K	3 W		4 M	5 S	6 C	7 R	8 P	9 G	10 D		11 A	12 X	13 H		14 E	15 Q	16 M	17 K		18 J	19 O
20 N	21 Y	22 T	23 B		24 I	25 H	26 V		27 F	28 A	29 J	30 C		31 M	32 J	33 K	34 P	35 R	36 W		37 X	38 U	
39 H		40 P	41 I	42 T	43 G	44 D	45 Q	46 F		47 M	48 S	49 A	50 L	51 H		52 R	53 K		54 X	55 W	56 N		57 C
58 G	59 H	60 U	61 V	62 M	63 P	64 D		65 J	66 X	67 O	68 K	69 Y	70 F	71 R	72 I	73 W		74 A	75 G	76 J	77 H	78 P	79 K
80 D	81 M	82 O		83 T	84 V	85 U	86 J	87 W	88 I	89 H	90 T		91 X	92 N	93 K	94 L		95 V	96 M	97 D	98 H		99 P
100 Q	101 W	102 Y	103 J	104 I	105 U		106 G	107 K	108 H	109 M	110 X		111 V	112 O	113 T	114 C	115 E	116 M	117 H		118 I	119 F	120 S
121 A	122 U		123 B	124 J		125 Q	126 Y	127 R	128 L	129 K	130 H		131 M	132 G	133 D	134 F	135 T	136 V	137 G	138 U	139 N	140 P	141 E
	142 H	143 Q		144 W		145 O	146 K	147 M	148 I	149 D	150 C	151 A	152 X	153 G	154 S	155 H	156 L	157 N		158 T	159 A		160 J
161 R	162 U	163 G		164 D	165 Y	166 Q	167 B	168 K		169 X	170 O	171 H		172 R	173 P	174 C	175 M	176 E	177 H	178 N	179 Q	180 I	
181 J	182 D	183 T	184 N		185 E	186 M	187 P	188 T	189 K		190 H	191 Y	192 R	193 X	194 S		195 F	196 I	197 J	198 S	199 W	200 Q	201 K
202 E	203 M	204 D	205 V		206 R	207 H	208 S	209 W	210 G	211 C	212 R	213 O		214 H	215 L		216 A	217 V	218 F	219 D	220 T	221 M	
222 H	223 X	224 N	225 S	226 M	227 U	228 Q	229 G	230 A	231 W		232 H	233 B	234 N	235 J	236 S	237 P	238 I	239 K	240 S	241 N	242 O		

LAST MONTH'S SOLUTION: J(ohn P.) Brion (and) M(arjane) Cloke, Down Memory Lane, "We (felt a genuine kinship with the Society and) were pleased (and proud) when Andy asked us to help. The first twelve years were (relatively) easy. The editorial office was at MONY (just a few steps from our desks). The print shop (was only) a block down Broadway. (In) the last eight years (geography has) presented (some) challenges...Despite (these handicaps the pieces came together month after month, so) [this] The ACTUARY reached readers (generally) on time...We will miss the fun (and satisfaction) we've enjoyed for twenty years." The ACTUARY, March 1987.