



Long-term-care insurance pricing methods mature

by Bruce Stahl

The *Wall Street Journal* published an article on long-term-care (LTC) insurance last June that addressed rate increases, particularly as they influenced seniors on limited incomes. It questioned whether some LTC insurers were initially underpricing in order to penetrate the market, knowing they would require rate increases in the future.

One carrier responded to this question by stating that a rate increase was required to cover the higher expenses it incurred as a result of its decision to pay benefits for care

in assisted living facilities. Though the contract did not provide for these benefits, the insurer felt it was necessary to do so in order to preserve the business.

Regardless of their motives, the industry as a whole should be thankful for these insurers who entered a market with very little information on which to base their premium rates.

Information from their pioneering effort makes us more confident to price LTC insurance today.

State insurance regulators believe the industry is now confident enough to issue policies that are essentially noncancelable in nature. Furthermore, regulators are penalizing companies that have already increased premium rates, despite the fact that the market has already begun to do this without government inducement.

The recently approved National Association of Insurance Commissioners (NAIC) LTC model regulation imposes the following features that make the nominally guaranteed renewable policies noncancelable in nature. (The difference between "guaranteed renewable" and "noncancelable" is that noncancelable policies cannot have rate increases.)

► **Actuarial certification.** Previous regulations concentrated on an actuary's certifying that the premium rates were reasonable in relation to the benefits and



set a minimum on the portion of the premiums that would go toward benefits. Under the new regulation, the actuary is expected to certify that the premium rates are adequate for the life of the policy.

► **Justification of rate increases.** The model regulation limits the amount of the rate increase that can be used for expenses, and it is designed to make it harder to justify a rate increase if the interest rate used for pricing is higher than the valuation interest rate (currently 4.5%).

► **Contingent nonforfeiture.** Some states already have this feature. It requires the offer of a paid-up benefit (a reduced maximum benefit) when rate increases accumulate to a specified amount that varies by issue age.

► **Guaranteed conversion privilege.** As an alternative to a rate increase, the policyholder may choose to purchase another policy from the insurers without being underwritten.

inside

Long-term-care insurance pricing methods mature by Bruce Stahl	1
Editorial: Looking back ...and ahead	2
by Craig S. Kalman	
How actuaries can help with problems of sustainability and the environment	4
by Michelle D. Smith	
Actuaries advise government on Australia's retirement income system	6
by Dr. David Knox and Anna M. Rappaport	
Actuarial Research Conference...	7
Social Security book.....	7
Puzzle results.....	8
In Memoriam	8



Craig S. Kalman
Editor responsible
for this issue

Editor

Robert D. Shapiro, FSA
shapiro@netstream.net

Associate Editors

Charles C. McLeod, FSA
cmcleod@rgare.com
Jay A. Novik, FSA
jaynovik@dellnet.com
Godfrey Perrott, FSA
godfrey.perrott@milliman.com
Anna M. Rappaport, FSA
anna.rappaport@us.wmmerc.com
Craig S. Kalman, FSA
craig@kalman.net

Assistant Editors

Morris W. Chambers, FSA
mo.chambers@londonlife.com
Morris Fishman
mfishman@asabenefits.com
Carl A. Westman, FSA
cw@actuaryoncall.com

Puzzle Editors

Louise Thiessen, FSA
thiessen@v-wave.com
Stephen Kinsky, FSA
stephen.kinsky@equitable.com
Gregory Dreher
gregory_dreher@phl.com>

Society Staff Contacts: 847/706-3500

Donna Steigerwald
Public Relations Manager
dsteigerwald@soa.org
Susan Nelson

Marketing and Public Relations Coordinator
snelson@soa.org

The Actuary welcomes articles and letters.

Send correspondence to:

The Actuary
Society of Actuaries
475 North Martingale Road, Suite 800
Schaumburg, IL 60173-2226
Web site: www.soa.org

The Actuary is published monthly
(except July and August).

Robert L. Brown, FSA, President
Robert M. Beuerlein, FSA, Director of Publications

Nonmember subscriptions: students, \$10; others, \$25.
Send subscriptions to: Society of Actuaries, P.O. Box
95668, Chicago, IL 60694.

Copyright © 2001, Society of Actuaries.

The Society of Actuaries is not responsible for statements
made or opinions expressed herein.

All contributions are subject to editing. Submissions must
be signed.

Printed on recycled paper in the U.S.A.

Looking back ...and ahead

by Craig S. Kalman

It's hard to believe it's now 2001. I thought it was interesting that the first day of this year was expressed as 01/01/01.

This New Year's celebration seemed relatively uneventful compared to when the clock rolled into 2000. Much of 1999 was spent worrying about the Y2K bug. Yet, while watching the fanfare on TV as each part of the world approached midnight on December 31, 1999, there was little evidence of problems caused by the Y2K bug. Or so we thought.

Little did we know about one system that would take months to show that it was not Y2K compatible. It emerged on Tuesday, November 7, 2000, when we found that the election system in the United States was not Y2K compatible—though, granted, it was not the same type of Y2K bug that we thought would be in computers.

Regardless of which candidate one voted for, it was a most exciting election. Voting was close in many states, and the Electoral College was almost evenly split. It will be interesting to see if having different front-runners based on the popular vote and the Electoral College counts will result in some type of system reform. Yet, such a situation is so infrequent in U.S. history that it may not be an issue as the 2000 election recedes into the past.

Thinking about the Electoral College system brings a number of "what ifs" to mind. With each state given a share of electoral votes based on the number of its Senate seats (two per state) plus the number of its representatives (based on population), a higher proportion of votes goes to smaller states than if the system were based on population numbers alone. The candidate with the most votes in a state takes all the electoral votes on a "winner-takes-all" basis.

So what if the system was not based on winner-takes-all? What if it was based on the representative count alone? What if the electoral count wasn't based on whole numbers, but allowed fractions based on the population? What if the population count was based on the 2000 census? What if the population component was changed to reflect the entire population of a state, or U.S. citizens only, or adults only, or eligible voters only, or registered voters only, or actual voters only? What if a majority (50%+) was needed at either the state or federal level for a candidate to win—with a run-off system to ensure it?

And here are more "what ifs." What if everyone who was registered to vote had actually voted? What if more people who are eligible to vote had registered and voted? After all, with the election as close as it was, this could have made a major difference in the result.

Even with the issues surrounding the vote count in Florida, we again saw down-the-middle decisions with differing opinions from different courts, as well as nearly 50/50 decisions on multi-judge panels (such as the Florida Supreme Court and U.S. Supreme Court).

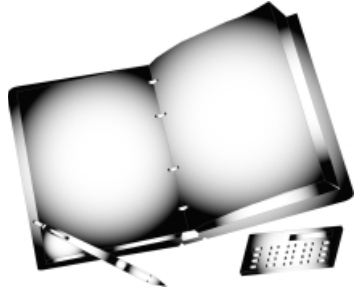
We also now enter a 50/50 split in the U.S. Senate. Does this mean that the country as a whole is as evenly divided as the political parties are? Probably not. It's more likely that we just have a diverse spectrum of individuals with different ideas on which direction things should be headed.

Three-and-a-half years from now, we will be full force in the next presidential election. Just as the beginning of a new year is a time to look back, it will be interesting then to see how we look back at the year 2000 election.

LTC insurance pricing

continued from page 1

The designers of the model regulation did not limit the rate increase deterrents to these pricing features. They also designed the regulation to penalize insurers who increase rates or have already done so.



► Insurance commissioner's authority.

By applying to the state for a rate increase, the insurer is automatically authorizing the insurance commissioner to oversee the insurer's underwriting and benefit processing operations. Furthermore, the insurer will need to file experience for subsequent years so that the commissioner may determine that the insurer should return unnecessary portions of the increase. Finally, the commissioner may even ban the insurer from the marketplace.

► **Disclosure of rate increase history.** At the point of sale, the insurer identifies the rate increase history for the past ten years. Unless the policy is noncancelable, this may easily kill the sale if the history is there. This provision is not grandfathered, so insurers who have already received state approval for increases will have to disclose this in the future.

Insurers already have strong marketing and financial incentives to price LTC insurance adequately, though these incentives have only developed in the past year or two.

A detailed rate increase history is available from a prominent organization in the LTC insurance circles, and its cost is nominal.

As for the operations, LTC insurance reinsurers are requiring that direct writers apply reasonable underwriting and benefit processing practices.

The regulatory environment is moving the industry into a new environment. Though insurers who enter the market are experiencing a stronger comfort level, they will depend more heavily on consultants, third party administrators,

and reinsurers who have the expertise to assure that the product is adequately priced and properly administered.

The comfort level is stronger for two main reasons. The first is that the industry has experi-

ence that is much more reliable than what it was only a few years ago. The second is that insurers have made pricing mistakes that serve as warnings.

Industry experience is identifying persistency rates, as well as nursing home and home health care claim costs, including incidence rates, continuance rates, and selection factors. Refinements are necessary, particularly as we see shifts in the type of providers, as we are now, with more assisted living facility utilization. Yet the benefit triggers associated with long-term-care insurance are not strictly limited to providers, and incidence can be applied with reasonable modification to alternate types of providers.

Modifications must be reasonable. While not necessarily directly related to providers, insurers have made unreasonable pricing assumptions in the past, and they need to be more careful to price reasonably in the future. Two examples are the pricing of increasing benefits and the pricing of limited-pay plans.

Prior to the mid-90s, some insurers priced increasing benefits by increasing the daily benefits for each incurral year, where the incurred date is the onset of benefit qualification. They failed to recognize that they also needed to increase benefits for each year while on claim. This understated the pricing requirements by as much as 10%.

The second example is limited-pay plans, which often included one set of annuity factors to convert full-pay premiums into limited-pay plans. They varied by issue age, but not by benefit design. Yet the policies with increasing benefits have a larger annuity factor for each age than policies without increasing benefits.

Limited-pay premiums for policies with increasing benefits were substantially underpriced.

Consultants and reinsurers who have benefited from seeing the historical mistakes are suited to provide the required guidance in the near-non-cancelable environment that we now face. A growing pricing practice is to have insurance company actuaries work with consulting actuaries to provide multiple perspectives on pricing issues.

Bruce A. Stahl is the principal for BAS Actuarial Services, a consulting firm in Gibbsboro, N.J., specializing in LTC insurance. He can be reached at BASActuary@cs.com.

Mail Alert

First ballot

First ballots for the 2001 SOA elections of officers and board members will be mailed to all Fellows on March 6.

To be valid, ballots must be received in the Society office no later than April 6.

Fellows who do not receive a first ballot by March 19 should call Lois Chinnock at the SOA office (847/ 706-3524).

How actuaries can help with problems of sustainability and the environment

Lessons from Australian “green” markets

by Michelle D. Smith

Australia is taking a lead role in developing market-based solutions to serious environmental problems brought about by various economic activities. So perhaps it is not surprising to see the members of the Institute of Actuaries of Australia becoming actively involved in this “new economics.”

The skill set of actuaries has a natural fit with problem-solving requirements in environmentally sustainable economics. Some of the relevant skills are long-term forecasting and assessment of long-term risks, modeling of complex dynamic populations, pricing risk transfer, and estimating sufficient capital for long-term viability or sustainability.

This article will first discuss the developments of actuarial work in this area that are taking place right now in Australia. Then, some ideas for future areas of involvement will be presented.

Actuaries and environmental economics

Growing global awareness of human-induced environmental problems and the need to move toward environmentally sustainable economies is giving birth to a host of emerging markets and creative market mechanisms to achieve such goals. Perhaps the most high-profile, contemporary mechanism is the carbon credit trading system designed to facilitate reduction of carbon dioxide emissions, the most prevalent greenhouse gas, and to internalize the costs of pollution by polluters.

We have also seen active markets develop for CFC (chlorofluorocarbon) credits to bring about an overall reduction in ozone depletion of the upper atmosphere.

Australia is now considering introducing markets for “biodiversity credits” and salinization control credits and is just about to launch carbon credit futures trading on the Sydney Futures Exchange.

In his 2001 presidential address to the Institute of Actuaries of Australia (December 2000), Tony Coleman addressed several driving forces of change and risk—and the associated opportunities for the actuarial profession—and

applications in these new fields. The main committees are:

► **Energy and Climate Change Practice Committee.** Recent activity includes a submission to the Australian Greenhouse Office discussing risk management of carbon credit trading systems, a research paper on asset/liability management for a carbon pool manager, attendance at various environmental markets seminars, and presentations of their findings at annual Institute meetings.

► Biodiversity/Natural Resource Evaluation Committee.

Members of this group recently helped a graduate student at Melbourne University complete a research paper on the evaluation of biodiversity, limited to the pharmaceutical value of a certain region of Australia, by using various actuarial techniques.

In addition, the Institute of Actuaries of Australia has established sub-groups to study the application of actuarial techniques to the rapidly growing area of “ethical investments.” Some members have also attended

meetings such as the United Nations Environment Program Financial Services Conference (Melbourne 2000), highlighting risks and opportunities for financial services companies related to the environment in terms of new products, risk transfer, and asset management.

Along the lines of “green” financial services products, Hancock Natural Resources Group, a subsidiary of John Hancock Insurance Company, established a Sydney-based global forest carbon sequestration program. In a company news release dated June 19, 2000, the head of this new program stated that the “green sector, in



highlighted some of the work already being done in these fields. One of the driving forces he mentioned was sustainability and the environment.

Mr. Coleman’s address touched on the growing demand for services related to the new environmental credits trading systems, risk management for both buyers and sellers of these tools, environmental reporting, and maximizing long-term returns by running a company on a sustainable basis. During 2000, the Institute of Actuaries of Australia established several environmental committees to look at actuarial



particular, is emerging as one of the most rapidly growing areas of investment in many regions

of the world.” The release also claimed that the new investment products provide a hedge to financial interests in traditional sectors and will help with risk management for companies producing greenhouse gas emissions.

A number of actuaries in Australia are employed in the energy markets, since these markets were deregulated four years ago. Some actuaries have growing responsibilities in advising companies on the financial impacts of global climate change policy and environmentally sustainable activities requirements. Examples of projects include development of corporate climate change strategy, assessment of emissions trading on energy markets, and commercial analysis of “Clean Development Mechanism” projects.

In 2000, the Sydney Futures Exchange worked in conjunction with NSW State Forests to design a product range based on carbon sequestered in Kyoto (the international “greenhouse gas” treaty) consistent forests. These derivative products are about to be traded on the exchange, and Australian actuaries are assisting carbon pool managers (who hold the forest assets backing the futures) with risk management.

Clearly, these are areas of potential involvement for actuaries worldwide. They are not specific to local markets, giving actuaries a wonderful opportunity to collaborate internationally on critical global issues.

Other potential demands for actuarial skills

In late November, I attended a conference of “biometricians” in the southeastern United States. While most of the attendees were in the business of “tree-chopping” (employed by logging companies, paper

producers, and university schools of forest resources), and I am a “tree-saver,” I was encouraged by recent developments in forest resources management by the forestry industry. For example, in the Pacific Northwest, consortiums of environmental advocacy non-profit groups, forestry corporations, and state and national regulators are now jointly designing forest management practice through a forest certification program. This leads to more complicated and environmentally sensitive forest management procedures and to a rapidly increasing demand for sophisticated ecosystem modeling, projection, and risk management tools.

To give one simple example: the “actuarial-type” assistance that the forestry company and university representatives mentioned repeatedly, once they discovered my actuarial background, was the urgent need for comprehensive tree mortality studies!

Historically, biometricians and forest managers have largely ignored tree mortality because there wasn’t much money to be made from dead trees. But growing ecological awareness and the emerging holistic approaches to forest management recognize dead trees (standing and downed) as extremely valuable. For example, (naturally) downed logs in riparian areas (close to streams) are important to local fish populations and, consequently, to the fishing industry. Snags, or standing dead trees, are important habitat to many forest creatures and so make a critical contribution to forest biodiversity and sustainability. Downed dead trees are important for soil quality, animal habitat, and carbon storage. This means that the forestry industry, fishing industry, non-profit environmental advocacy groups, and governmental bodies are now clamoring for reliable tree mortality studies. The biometricians indicated that the actuarial profession could be of great assistance here.

University research departments and research stations of the USDA Forest Service, among others, are actively engaged in the evaluation of natural resources and the environmental services

provided by them (such as clean air, clean water, productive soil, pollinators, climate control, nutrient and water recycling, and carbon sequestration), long taken for granted by the markets. As an extension of this work, another potential area for actuarial applications is risk-based management of natural resources and asset/liability management of natural environmental assets against human infrastructure liabilities.

Actuaries have spent years developing tools for risk-based management of financial assets and liabilities. It seems these techniques could be applied to risk-based management of natural resources whose services are strained by a certain level of human activity. Such an approach can help resolve the conflict between those who think natural resource extraction has gone too far and those who think it can go farther without affecting sustainability.

Many recent changes in financial services will bring about significant changes for the actuarial profession, and we seek new opportunities emerging from those changes. The necessary move of the global economy toward more sustainable economic activities is likely to bring further changes to financial markets and to corporate and societal risk management. We already see tremendous growth in the “green” investment market for reasons ranging from ethics to risk management to return enhancement.

This new economic view requires careful management of long-term assets and liabilities, as well as sophisticated modeling, valuation, and risk management tools. Actuarial skills are perfectly suited to these applications, and the experience in Australia is already showing us how these skills can be applied in practice.

Michelle D. Smith is a consulting actuary for Tillinghast-Towers Perrin in Atlanta, and a Fellow of the Institute of Actuaries of Australia. She can be reached at smithmd@towers.com.

Actuaries advise government on Australia's retirement income system

by Dr. David Knox and Anna M. Rappaport

The pension community in the United States has been frustrated for many years because the country does not have an integrated pension policy. Much pension legislation is designed to protect plan participants, but other legislation is designed to help reduce budget deficits and meet government financial goals. Often it seems that there is no sense to what is enacted in total.

In Australia, there are also questions of pension policy, and the actuarial profession is taking an active role to try to get a positive solution. For several months last year, Dr. David Knox, the then President of the Institute of Actuaries of Australia, chaired a task force comprising several industry and professional bodies to develop a framework to be used as a benchmark for future retirement income policy in the country.

In October, the task force sent the following letter to the Australian Prime Minister and other leading politicians about the desired direction for the country's retirement policy:

"The principles underlying the ongoing development of Australia's retirement income system are important in many respects for Australian society. The retirement income system affects every Australian household and has significant macro economic effects.

"There is significant unity within the superannuation, financial services, and business sectors about the framework principles that should underpin our retirement income system.

"The attached framework principles have been agreed by the organizations listed below as being appropriate to benchmark

existing policies and future initiatives in this area. We therefore urge the Government to use these principles in developing or considering any future initiatives that impact on our retirement income system."

The letter was signed by the presidents or CEOs of 15 organizations including:

- Australian Chamber of Commerce and Industry (ACCI)

The actuarial profession in Australia is taking an active role to achieve positive solutions to problems concerning the country's pension policy.

- Australian Council of Trade Unions (ACTU)

- Australian Industry Group (AIG)

- Australian Stock Exchange

- Association of Superannuation Funds of Australia (ASFA)

- Institute of Actuaries of Australia

- Institute of Chartered Accountants of Australia

- Law Council of Australia

- Securities Institute of Australia

The letter's attachment read:

"Framework principles for the Australian retirement incomes system

"It is recognized that providing financial security for older Australians encompasses a range of important issues including housing, health, retirement incomes, and aged care. This document concentrates on the principles that apply to the provision of retirement incomes for Australians.

"It is agreed that the following principles can be used to benchmark any policies or initiatives.

"That the overall framework:

- ▶ Adopts an integrated long-term approach to ensuring adequate and sustainable retirement income for all Australians
 - ▶ Encourages an overall increase in national savings to enable sustainable economic growth and an internationally competitive economy
 - ▶ Encourages a savings culture within the community through education and relevant fiscal and legal structures
 - ▶ Provides an environment where those who are able are encouraged to be self-reliant
 - ▶ Recognizes that considerable changes are occurring in labor markets, family structures, and personal desires and so establishes a framework to maximize coverage, participation, and saving for retirement on an equitable basis
 - ▶ Is simple to understand
 - ▶ Has an efficient and effective regulatory structure
 - ▶ Has the confidence of the Australian community and support from all major political parties
- #### **"That the overall framework for the provision of retirement income:**
- ▶ Maintains the diversified sources of funding for retirement as reflected in the three pillar structure for retirement incomes of a means tested age pension, compulsory superannuation (the SGC) and voluntary superannuation/savings

► Encourages coherent integration between these three pillars

► Encourages the provision of retirement benefits, primarily in the form of income streams

► Is equitable between individuals, across lifetimes and between generations

► Recognizes the importance of disclosure for consumers and a robust consumer protection regime, together with consumer education

“That in respect of each pillar —

► **the (government-funded) age pension:**

- Is maintained as a safety net for all Australians at no less than its current level in real terms

- Continues to be funded from general taxation

- And associated means tests provide appropriate incentives for retirees to invest their financial resources and participate in the labor force

► **the compulsory superannuation system:**

- Has as its objective the provision of retirement incomes

- Enables a level of compulsory contributions that both supplements the age pension and reduces the long-term costs to Government of retirement income provision

- Has the broadest possible coverage and participation

- Is sufficiently flexible to accommodate, after preservation age, both the payment of contributions and the receipt of benefits, as appropriate

► **voluntary saving through superannuation and other vehicles:**

- Should be encouraged as part of the savings culture, with particular preferences given for medium and long-term savings

- Is flexible, recognizing a range of individual life-cycle positions

“That the taxation of superannuation:

► Ensures that superannuation is taxed in a manner that maintains community support and confidence and recognizes the costs to individuals of its long-term perspective and high level of preservation

► Should be designed to provide a clear incentive to save, preferably at the point of contribution, and have a focus on taxes on benefit payments, as this provides the simplest method of achieving equity, provides increasing revenue in future years, and is consistent with international practice

► Is simple to understand

► Can be operated transparently and efficiently”

* * *

As we look at the actions taken in Australia, we in the United States should ask ourselves: what can we learn from this? Could we in the actuarial profession work with other groups to establish principles? Could we reach consensus? How could we sell our point of view?

These issues are relevant today. During the year 2000, we saw major pension legislation nearly pass Congress. We have been discussing Social Security reform for several years. We are likely to see more focus on these issues in the years to come.

Dr. David Knox is past president of the Institute of Actuaries of Australia. He can be reached at david.knox@au.pwcglobal.com.

Anna M. Rappaport, 1997-98 SOA president, is a principal with William M. Mercer Incorporated, Chicago. She can be reached at anna.rappaport@us.wmmerc.com.

Actuarial Research Conference set for summer

The 36th Actuarial Research Conference (ARC), hosted by Ohio State University and the Nationwide Insurance Enterprise, will be held August 9-11, 2001, in Columbus, Ohio. The annual event provides an opportunity for academics and practitioners to meet and discuss actuarial problems and solutions.

Presentations are welcome on all topics of interest to actuaries. To ensure a spot on the program, submit an electronic copy of the presentation title and abstract to Steve Craighead at craighs@nationwide.com by June 1, 2001. Presentations will be published in the conference proceedings, *Actuarial Research Clearing House 2002.1*.

For more information, contact:

Dr. Bostwick Wyman
Ohio State Mathematics Department
231 West 18th Avenue
Columbus, OH 43210
E-mail: wyman.1@osu.edu
Web site: <http://www.math.ohio-state.edu/ARC2001>

Complimentary copies of Social Security book available

A limited number of copies of *The Big Lie*, a 1997 book about Social Security and Medicare, are available from the author, A. Haeworth Robertson, former chief actuary of the Social Security Administration.

Obtain copies, while they last, by writing Robertson at 2158 Florida Ave. NW, Washington, D.C. 20008 and enclosing four 34-cent stamps (no meters, please) and a self-addressed mailing label.

ActuPuzzle solutions

Solvers list for Puzzle #30 - June 2000 (Ten Friends)

100% solvers: J. Aadland, A. Aakre, D. Ahlgrim, M. Arnes, S. Barclay, R. Bartholomew, D. Bearrood, D. Berne, C. Bilodeau, B. Bock, S. Boger, F. Brown, L. Cappellano, D. Carlisle, M. Chartier, C. Chase, C. Cheong, O. Chow, L. & P. Chulik, M. Cleary, M. & V. Crouch, R. Damm, W. DeLandros & V. Wong, G. Dreher, J. Dudajek, J. Durand, L. Dyrland, M. Evans, K. Fang, C. Fievoli, H. Fishman, N. Franceschine, A. Galande, B. Gold, P. Gollance, R. Guo, A. & K. Hanson, R. Hendricks & J. Mannenbach, N. Jabran, C. Jansen, K. Klinger, T. Kowalczyk, S. Keuster, J. Kuklinski, S. LaBarre, C. Lemming, D. LeSueur, G. Ludwig, D. Lueck, G. Lynham, A. Mackaay, R. Makin, D. Mallet, P. Marks, M. Masterman, T. McEntee, J. McIntosh, J. Mereu, D. Moger & R. Richard, P. Morse, D. Mytelka, A. Natsis, J. Paprocki, M. Parminter, A. Pass, D. Phillips, K. Rayburn, S. Richmond, I. Schaeffer, S. Scoles, G. Sherritt, E. Shevchuk, M. Spevacek, R. Stokes, A. Stubno, D. Thaller, J. Verlautz, C. Vinsonhaler, T. White, R. Wilton, P. Wright, J. Zajicek.

Solution:

Barney Taylor, judge, age 63; Hilda Taylor, lawyer, age 57
Abner Stewart, neurosurgeon, age 42; Fanny Stewart, lawyer, age 39
Clyde Urban, pediatrician, age 45; Inez Urban, pediatrician, age 45
Dwight Quentin, mathematician, age 48; Gladys Quentin, mathematician, age 52
Ephraim Randall, lawyer, age 61; Kate Randall, ophthalmologist, age 35

Congratulations to Andrea Pass, this month's winner of a Famous Solver of ActuPuzzles mug!

Editor's notes: Thanks to Gerry Samp for providing this terrific puzzle. We had a lot of entries, however, almost one-third were incorrect. (Note that '1' is not a prime number!) Philip Morse has graciously offered to e-mail a detailed solution to those of you who are still having trouble with it or who want to know where you went wrong. You can request a copy at morsep@towers.com.



Solver's List for Puzzle #31 - September 2000

100% solvers: B. Alexander, W. Allison, A. Amodeo, D. & W. Apps, F. Bernardi, C. Bilodeau, A. Brosseau, R. & M. Buck, G. Cameron, L. Cappellano, Y. Cheng, D. Chun, S. Colpitts, D. Cooper, A. Coutts, J. Darnton, G. Dreher, J. & S. Dudajek & A. Buckley, M. Eastburn, M. Eckman, D. Ericson, H. Fishman, G. Fitzhugh, R. Fleckenstein & P. McEvoy, D. Fleiss, N. Franceschine, C. Galloway, M. Garshon, J. Gladden, P. Gollance, J. & A. Grantier, S. Gruhlke, R. Harder, S. Harrison, G. Horrocks, B. & L. Horwitz, J. Jakielo, M. Jarnes, M. Kimball, R. & J. Koch, D. Leapman, S. Loffree, W. Lumsden, M. Lykins & J. O'Connor, M. MacKinnon, D. & S. Magnusson, R. Maguire J. Marko & B. Szuta, R. Martin, J. McIntosh, R. Miller, P. Morse, M. Mortensen, D. & C. Promislow, J. Raich, R. Ramshaw, F. Rathgeber, J. Ripps, M. Ristau, N. Sato & E. Marsden, I. Schaeffer, B. Scott, G. Sherritt, M. Spevacek, E. Thompson, M. Vandesteeg & A. White, C. Velasquez, J. Verlautz, R. Wilton, F. Zaret.

Solution:

Across—1.president 6.pareu 9.retrace 10.quonset 11.irate 12.uniformed 13.archipelago
17.compensated 22.hankering 23.wheel 24.oversee 25.inspect 26.erred 27.scheduled
Down—1.partisan 2.entrance 3.image 4.execute 5.tequila 6.protocols 7.resume 8.untidy
14.increased 15.ethereal 16.adulated 18.maiden 19.english 20.choose 21.endear 23.wised

Congratulations to A. Amodeo, this month's winner of a Famous Solver of ActuPuzzles mug!

In Memoriam

Donald L. Addink
FSA 1980, MAAA 1980

William C. Brown
FSA 1941, MAAA 1965

James Thomas Faris III
ASA 1994

James B. Germain
FSA 1968

Olaf E. Hagen
ASA 1950, ACAS

Robert J. Hess
ASA 1965, MAAA 1966,
FCA 1983, EA

Joycelyn A. Hinds
ASA 1985

Robert C. Hoffman
ASA 1954, MAAA

Robert M. Johnstone, Jr.
FSA 1957, MAAA

Maxwell Lander
ASA 1957, FIA 1940, FFA

Robert I. Mizner
FSA 2000

John F. Ryan
FSA 1942, AIA, MAAA, CAS

Ted E. Smalley
FSA 1966

Fred Tallman
ASA 1956, FCIA 1966

James M. Woolery
FSA 1931, MAAA, EA-I, ACAS