

**1 The Problem of Setting Up
Additional Reserves**by Donald M. Walker,
Robert W. Guth and A.
Grant Hemphill**2 From the Editor
Great Support Exists for
Small Company Actuaries**

by Michael L. Kaster

**4 Chairperson's Corner
The Way It Should Be**

by Jerry Enoch

**11 Enterprise Risk
Management Can Work
for Smaller Insurance
Companies**

by Sharon Giffen

**14 Recent and Upcoming
SOA Meeting Sessions
of Interest to SmallCo
Members**

by Don Walker

**15 Leading Contributors
to Mortality Risk in Life
Insurance Applicants**by Jim Palmier, M.D.,
Ammon Dixon and
Brian Lanzrath**18 Access to Reinsurance
by Smaller Insurance
Companies**

by W. Michael Reese

22 Regulatory Update

by Norman E. Hill

**25 Blast Emails Get SmallCo
News Out Faster**

by Mark Rowley

**27 Mortality Table
Updates—2012**

by Karen Rudolph

**29 The Low Interest
Environment Team of
the Smaller Insurance
Company Section**by Jim Thompson and
Mark Rowley

ISSUE 38 OCTOBER 2012

smalltalk

The Problem of Setting Up Additional Reserves

By Donald M. Walker, Robert W. Guth and A. Grant Hemphill

***Note from the authors:** This article will look at issues and examples of setting up additional reserves. We consider traditional reserve strengthening, health deficiency reserves under the Health Reserves Guidance Manual of the National Association of Insurance Commissioners (NAIC), and additional reserves required under asset adequacy analysis by Actuarial Standard of Practice (ASOP) No. 22. We discuss ways to set up extra reserves and what to do in subsequent reporting periods. A final issue is whether traditional or health deficiency reserve strengthening should be done to head off additional reserves under asset adequacy analysis.*

**Three Kinds of Reserve
Strengthening**

Traditional reserve strengthening has been part of the Standard Valuation Law for a long time (i.e., before 1976). The amendments to the Standard Valuation Law in 1976 removed references to deficiency reserves, but provided for increases to basic life reserves if the gross premium for a policy is less than the valuation net premium calculated using the actual valuation method, but with minimum standards of mortality and interest. In those cases, the required minimum reserve is increased or strengthened. References to deficiency reserves returned in the Valuation of Life Insurance Policies

Model Regulation (1994 and 1998). According to the NAIC Annual Statement Instructions for 2011, Exhibit 5A (Changes in Bases of Valuation During the Year) is used to report changes to reserves for life contracts (Exhibit 5), accident and health contracts (Exhibit 6) and deposit-type contracts (Exhibit 7). These changes to traditional reserves are mostly by formula. Further definition can be found in Statement of Statutory Accounting Principles (SSAP) No. 51 (Life Contracts), item 33, "Change in Valuation Basis."

Codification of statutory accounting in 2001 introduced additional reserves known as premium deficiency reserves. These are defined in Statement of SSAP No. 54 (Individual and Group Accident and Health Contracts), item 18, "Additional Reserves (Premium Deficiency Reserves)." The calculation of these reserves is further amplified in the 2007 Health Reserves Guidance Manual that was adopted by the B Committee of the Life and Health Actuarial Task Force (LHATF). Health premium deficiency reserves are established or released annually when the expected claims payments or incurred costs exceed premiums to be collected for the remainder of a contract period. The period may extend for more than a year. These reserves are recorded in Exhibit 6, line 3.

Continued on page 6

Published by the Smaller Insurance Company Section of the Society of Actuaries.

This newsletter is free to section members. Current issues are available on the SOA website (www.soa.org). To join the section, SOA members and non-members can locate a membership form on Smaller Insurance Company Section Web page.

Facts and opinions contained herein are the sole responsibility of the persons expressing them and should not be attributed to the Society of Actuaries, its committees, the Smaller Insurance Company Section or the employers of the authors. We will promptly correct errors brought to our attention.

Copyright © 2012 Society of Actuaries. All rights reserved.
Printed in the United States of America.

2012 Section Leadership

Jim Toole, BOD Partner
Jerry Enoch, Chairperson
Mark Rowley, Vice Chairperson
Robert W. Guth, Secretary/Treasurer
Daniel Durow, Council Member
Philip Ferrari, Council Member
Erik Matthew Gravelle, Council Member
Robert Hrischenko, Council Member
Narayan Shankar, Council Member
Don Walker, Council Member

Content Managers

Michael L. Kaster
Life Solutions Group of Willis Re Inc.
New York, N.Y.
Phone: 212.915.8332
mike.kaster@willis.com

Mark C. Rowley
EMC National Life Company
Des Moines, Iowa
Phone: 515.237.2147
mrowley@emcnl.com

SOA Staff

Jacque Kirkwood, Staff Editor
jkirkwood@soa.org

Meg Weber, Staff Partner
mweber@soa.org

Jill Leprich, Section Specialist
jleprich@soa.org

Julissa Sweeney, Graphic Designer
jsweeney@soa.org

From the Editor

Great Support Exists for Small Company Actuaries

By Michael L. Kaster

Michael L. Kaster, FSA, MAAA, is senior vice president of the Life Solutions Group of Willis Re Inc., located in New York, N.Y. He can be reached at mike.kaster@willis.com.

As I am writing this, I am returning from the long trip to Southern California for the Valuation Actuary Symposium. It was another great meeting, and small company actuaries were very well represented.

This will be my last edition of *smalltalk* as editor. It has been a good two years, and there have been many great contributions from our team of authors and volunteers. I hope you enjoy this edition, and all future versions of this newsletter.

You can look at the table of contents to see what's coming up. I wanted to just comment on the outstanding work done by the section council. Over the last

few years, the engagement of this group of volunteers has been **OUTSTANDING**, and they are a tremendous resource to you, the small company actuary. If you are not taking advantage of some of their outstanding service offerings, you are really missing out. Recently I heard that one of the webinars put on by SmallCo was one of the best EVER! And the Small Company Chief and Corporate Actuaries' Open Forum at Val Act was the best I've ever attended.

I hope this and all future editions of *smalltalk* are of value to you. ●



Connection. Community.

Join our SOA Annual Meeting community. Unite with peers. Make new connections. Revive old ones. Connect with speakers during our more than 100 sessions—and get loads of CPD credit.

SOA 2012

ANNUAL MEETING & EXHIBIT

National Harbor, MD
Oct. 14-17

Sign up for these sessions, sponsored by the Smaller Insurance Company Section:

Current Topics Impacting Smaller Insurance Companies

Session 43

Come and take part in a think tank session where peers collaborate and discuss where they've been and where they need to go regarding current issues impacting the smaller insurance company.

Low Interest Rates: Financial and Product Impacts

Session 104

Interest rates are low, but are we sure they can't go lower? The insurance industry has to know how to manage its business in the relatively likely scenario of prolonged low interest rates. This workshop will discuss the impact low interest rates could have on insurance companies.



Ready to connect? Head to SOAAnnualMeeting.org.



Chairperson's Corner

The Way It Should Be

By Jerry Enoch

Jerry Enoch, FSA, MAAA, is vice president and chief actuary for Alfa Life Insurance Corp. in Montgomery, Ala. He can be reached at JEnoch@alfains.com.

Sometimes things happen the way they should. At the all-day face-to-face meeting of the Smaller Insurance Company Section Council in last fall, we had a “blue sky” session. One of the members, Mark Rowley, who was new to the council and is now the vice chair, said something like, “Isn’t the purpose of the section to collect and distill information that our members can use?” After a brief discussion, we agreed with that statement, verified it was consistent with the section’s official purpose and wrote it on the marker board.

Now what? We couldn’t just say, “OK, we’ll do that. What’s the next item on the agenda?” After a few moments, I suggested we pick one topic and try to fulfill the mission in regard to that topic, while we accomplished our other objectives. If we could learn to do this for one topic, we could transfer our learning and fulfill the mission on other topics. Someone immediately said,

“The low interest rate environment.” Everyone agreed. We had already discussed that we are in a most unusual environment, which has very far-reaching consequences.

The Low Interest Rate Environment Team was created, with three council members, Bob Guth, Don Walker and Mark Rowley, and two friends of the council, Bill Sayre, a former chairperson, and Jim Thompson, newsletter editor for more than 10 years. As specific needs arose, Terry Long, another

former chairperson, was added to bring additional knowledge about valuation interest rates.

They immediately began having calls at least monthly, and gathering, distilling and disseminating information. They are using blast emails, newsletter articles, webinars, and sessions at meetings to reach section members, and they have made presentations at actuarial club meetings to share the news and sharpen their message and delivery. Instead of draining the section council, they have invigorated everything we have done. The team has no expiration date; they will remain active as long as we have the need and capability.

I applaud the work of the Low Interest Rate Environment Team and thank them for what they are doing. In my opinion, this is exactly the type of grassroots activity envisioned when the Society of Actuaries strengthened the role of sections almost 10 years ago. To learn more about the Low Interest Rate Environment Team, see the article co-authored by Jim Thompson and Mark Rowley in this edition of *smalltalk*.

This experience also demonstrates the importance of friends of the council, who stay in the loop as we address various emerging topics during our meetings and in between, and who get directly involved, as some issue intersects their availability. SmallCo provides an opportunity for actuaries at smaller insurance companies and those who consult for

them to establish some wonderful relationships and to make a difference. To contact the Low Interest Rate Environment Team for any reason (comments and questions are appreciated), call Jim Thompson at 815.459.2083 or Mark Rowley at 515.237.2147. To talk about the section council, call Jerry Enoch at 334.612.5013.

Yes, sometimes things happen the way they should. ●

SOCIETY OF ACTUARIES

NOV. 1:

Attestation OPEN



Attestation will open.

You must attest compliance with the SOA CPD Requirement or be considered non-compliant. Three simple steps to attest:

- ✓ **STEP 1:** Log on to the SOA membership directory and click the SOA CPD Requirements button on the main page.
- ✓ **STEP 2:** Indicate if you have met the SOA CPD Requirement.
- ✓ **STEP 3:** Identify which compliance path was used.

Attest today at SOA.org/attestation.

The adoption of the Actuarial Opinion and Memorandum Regulation (AOMR) in 1990 brought additional reserves due to asset adequacy analysis or cash flow testing (CFT). The AOMR (NAIC Model 822), section 5E(2) and (3) states:

If the appointed actuary determines as the result of asset adequacy analysis that a reserve should be held in addition to the aggregate reserve held by the company and calculated in accordance with methods set forth in the Standard Valuation Law, the company shall establish the additional reserve.

Additional reserves established under Paragraph (2) above and deemed not necessary in subsequent years may be released. Any amounts released shall be disclosed in the actuarial opinion for the applicable year. The release of such reserves would not be deemed an adoption of a lower standard of valuation.

Additional reserves from asset adequacy analysis go on Exhibit 6, line 3 for health policies, and on Exhibit 5, Miscellaneous Reserves for life policies. Some companies report it with the line(s) of business that generated it.

Differences in Types of Reserves

Because premium deficiency reserves and asset adequacy analysis additional reserves both go on Exhibit 6, line 3 for health policies, some clarification is necessary.

Traditional reserves are calculated first. Then premium deficiency reserve testing prescribed under SSAP No. 54 and as clarified in the Health Reserves Guidance Manual is performed. Finally, asset adequacy analysis is performed including those previously calculated reserves.

Health deficiency reserve testing is a short-term test for the next one to several years, where new business and selling expenses are included. All of the company's health business is tested within several specified lines of business (comprehensive major medical health, disability, long-term care and short-term health). Testing for premium deficiency is performed for separate blocks of business that are then aggregated within each specified line of business.

In asset adequacy analysis, the actuary performs a gross premium valuation over the entire business lifetime, where the actuary excludes new business and selling expenses. These results are aggregated with all other independent lines of business with offsetting risks. Upon completion, the results for asset adequacy analysis utilize previously calculated traditional reserves including any life deficiency reserves caused by X

factors and previously calculated health premium deficiency reserves. If further asset adequacy analysis additional reserves are required, these are established by the company.

Brief History of Asset Adequacy Analysis

Asset adequacy analysis has been part of the landscape for life actuaries since 1990, but it is fair to say that many appointed actuaries practicing today had never seriously considered putting up additional reserves for their companies until recently. We discuss what has changed and how some appointed actuaries have gone about the previously unresolved task of how to determine the amount of additional reserves.

It is fair to divide the history of asset adequacy testing into three eras—the early period (the 1990s), when the emphasis was on developing the methodologies to do asset adequacy analysis; the middle period (2000-07), when the processes were largely settled except for those companies doing cutting-edge product development (variable products with guaranteed benefits and universal life with secondary guarantees); and the recent period (2008 to present), when there has been economic turmoil and low interest rates. For smaller companies (the main audience for this article), who tended not to write the more exotic products, the early period was one of painful transition to a resource-consuming process with little visible return on investment. The middle period was one of finding ways to get the work done efficiently and then just marking off the task each year. Few, if any, smaller companies ever put up additional reserves prior to 2008.

That doesn't mean there weren't a few anxious moments or creeping doubts. In the mid-1990s, there was a year when interest rates had spiked upward. Anyone doing a significant amount of deferred annuity business had a bit of a problem with the "pop-up" scenario, at least until the consultants started recommending the use of the arctangent excess lapse formula. As the 2000s progressed, and interest rates trended lower, some warning signs started to crop up in the "down" scenarios for certain business segments. Problems included aging payout annuities sold when rates were high, par life modeled without dynamic dividend scales and universal life (UL) with relatively high interest rate guarantees. At that time, the failures (if any) were small and could be explained away. Reserves were adequate in aggregate. Company management could reduce dividend scales (and a 50 percent reduction made the failure go away). Nonguaranteed elements could be changed. No additional asset adequacy reserves were required, at least not at that time. Actuaries thought that as soon as rates rose a bit, everything would be fine.

But then came the economic downturn of 2008. Consultants standing up at the Valuation Actuary Symposium in September 2008 told us we had a responsibility as appointed actuaries to do our jobs right (and to read that Halloween letter!). This was a heavy burden and there was very little guidance on how to actually determine an asset adequacy reserve.

2007 had been an easier year than most. Spreads had been wide, so reinvestment income had been there in most scenarios. Default rates had been low for a long time. All of a sudden, it might have been wrong to have made those assumptions last year. New assumptions would be required for the new era.

Cases after 2007

Case Study 1 (2008)

Yield curve (Sept. 30, 2008): 90 day at 0.92 percent, 10 year at 3.85 percent

Spreads: very wide; default risk was a very big concern

Economy: crisis; almost complete loss of confidence in markets and ratings

Starting bond Asset Valuation Reserve (AVR) was largely wiped out by Lehman failure and resulting Other Than Temporary Impairments (OTTI).

CFT assumption changes:

Assume spreads grade back to precrisis "normal" over 30 months. Assume defaults have major spike up in first 15 months and return to precrisis "normal" over 36 more months. Assume ratings cannot be relied on; revise modeled ratings based on market prices.

Results (New York 8 (NY8) and Risk-Based Capital 200 (RBC200)):

Combined company results showed immediate loss of surplus (1 percent of company surplus) in all scenarios driven by increased defaults and no AVR. Level and up scenarios recovered and ended positive. Down scenarios ended negatively after 12 years.

Life segments had gains in up scenarios and losses in down scenarios. Deferred annuities were hurt in up scenarios. Payout annuities failed all scenarios (worst was 1 percent of payout reserves). Down scenarios losses could be mitigated by cutting dividends on traditional par life.

Conditional Tail Expectation at 85 (CTE-85) stochastic results were a deficiency of 4 percent of company surplus. Modeling a 25 percent dividend cut reduced the deficiency to 0.6 percent of surplus.

Other considerations:

Management will reduce the dividend scale in 2010. Agents were told to illustrate 88 percent of current (2009) dividends. CTE-85 stochastic results now have a deficiency of 1.7 percent of surplus. If payout annuity reserves are recomputed with Annuity 2000 (A2000) mortality and the lowest stat interest rate of recent years, those reserves would be strengthened by 2.5 percent.

Conclusion:

The 2008 asset adequacy reserve is set at 1.7 percent of surplus (60 percent to cover immediate default risk and 40 percent for long-range deficiencies). The 60 percent is allocated to all business and the 40 percent to payout annuities. The appointed actuary considered management's future dividend decision in forming the opinion. During 2009, the additional reserve is carried forward based on additional strengthening needed by payout annuities.

Reflections:

The appointed actuary in 2012 believes that some of the assumptions were perhaps more than moderately adverse. Defaults recovered quickly. The yield curve at Dec. 31, 2008, was significantly below that at Sept. 30, 2008, and should have been considered. These two results may have offset to some extent, but it was a reasonable first effort in a regime-changing year.

Case Study 2 (2010)

Yield curve (Sept. 30, 2010): 90 day at 0.16 percent, 10 year at 2.53 percent

Spreads: tight compared to 2008, but still 50 basis points above long-term "normal"

Economy: Recovering, but interest rates are very low again Starting bond AVR is almost nil from prior year losses and OTTI.

CFT assumption changes:

Assume spreads grade back to "normal" over 36 months if five-year Treasury rises above 3 percent, but do not revert if interest rates remain low. Assume defaults are 1.2 times Moody's ultimate and revert to "normal" over 36 months. Health deficiency reserves of 36 percent above traditional health reserves are established before asset adequacy analysis. These are caused by excessive operational expenses after loss of a large account, and by poor claims experience.

Results (NY8):

"Combined company results showed immediate loss of surplus (1 percent of company surplus) in all scenarios driven by increased defaults and no AVR."

Continued on page 8

Combined company results showed positive results in all scenarios.

Health and life segments together are essentially at breakeven, except for positive results in one plan that are aided by health deficiency reserves. Deferred annuities (mostly with 3 percent guarantees) have losses in all but two scenarios of New York 7 (NY7). Annuities need additional reserves of 9 percent of surplus to break even. Health results are positive enough to cover annuity losses.

Other considerations:

Annuity results have a long-term problem with low interest rates. Health results are unstable year after year and depend on premium deficiency reserves this year. Company seems to have difficulty working out of the health deficiency. The health and life positive results were historically unstable and unlikely to always cover the annuity losses.

Conclusion:

The 2010 asset adequacy reserve is set at 9 percent of surplus and is allocated to annuities. The appointed actuary thought that the annuity losses were serious and long term and unlikely to go away under level and down scenarios. The additional reserve was held until 2011 and was retained then.

Reflections:

The appointed actuary in 2012 thought that the additional annuity reserve may have been conservative but that it was appropriate given the uncertainty about long-term low interest rates. In 2012, management cut back on commission and other expenses and that may allow positive annuity results in future years if interest rates recover a little.

Case Study 3 (2011)

Yield curve (Sept. 30, 2011): 90 day at 0.02 percent, 10 year at 1.92 percent

Spreads: continuing to narrow but still wider than long-term averages

Economy: U.S. debt downgraded by S&P, but Europe in deep trouble; U.S. economy still in slow recovery

Starting bond and mortgage AVR were largely rebuilt.

CFT assumption changes:

Assume that spreads would grade back to early 2000s levels over 12 to 24 months (depending on asset class; best class grades back quickest). Assume that bond defaults follow

updated long-term averages, including results from crisis. Mortgage defaults vary based on year the loan was underwritten. Consideration is given to both agency ratings and market values to classify assets. Existing deferred annuities are at minimum guaranteed crediting rates in level scenario.

NY8 results:

Combined company results are positive in early years of projections, but go negative in the later years of the level and down scenarios. Level scenario loss is 3 percent of surplus without mitigating assumptions; downs are worse.

Individual segment results:

Life segments fail level and down scenarios; annuities pass all scenarios. Starting yield curve is so low that annuities get better results in the up scenarios (which is unusual; they usually do worse in the ups). Life failures can be partially mitigated by substantial dividend cuts on par business, but there is no easy solution to universal life failures (other than increasing Cost of Insurance Rates (COIs)); UL failure in level scenario is 8 percent of surplus.

Stochastic results (RBC200):

Generally better; possibly due to upward interest rate bias in the generator. CTE-85 for UL is negative 5 percent of surplus but total company CTE-85 is positive.

Sensitivity tests:

Results are very dependent on renewal premium levels assumed for interest-sensitive products. Delayed pop-up and grade-up scenarios show deteriorating results the longer the rate increases are delayed. A roll-forward level scenario (using real rates for October, November and December, then level at year-end) shows similar results to NY8 level at September. 30 curve).

"Results are very dependent on renewal premium levels assumed for interest-sensitive products."

Other considerations:

Dividend scale decrease begins Jan. 1, 2012; senior management has approved mild renewal premium restrictions where possible. No action on UL. Note that dividend scale was based on mid-year 2011 portfolio and yield curve projections; rates are lower now.

Conclusion:

The 2011 asset adequacy reserve is set to 4 percent of surplus, almost all of which is allocated to UL. The appointed actuary considered management's current and possible actions relative to dividend scale changes, renewal premium restrictions on annuities and UL, and other possible UL changes. He thought that management would react where reasonable but would not take extreme actions (such

as a UL COI increase). He considers the level scenario to be credible and cannot completely dismiss the downs. He has budgeted to do further increases in the asset adequacy reserve amounting to 1 percent of surplus during 2012 if rates stay at current low levels (as forecast by the Fed).

Self-critique:

The appointed actuary believes he is setting a reasonable number for 2011 and taking a reasonable forward-looking action during 2012. His current dilemma is what to do if rates start to rise. He thinks it would be wrong to release the reserve without evidence that the increase is more than transitory and without further refinement of the models. His likely 2012 actions will range from maintaining the current reserve to increasing it.

Reflections on Setting Additional Reserves

There are several ways actuaries can set up additional reserves with asset adequacy analysis. If there are any health premium deficiency reserves to be calculated, those are computed first. Many actuaries think it is prudent to have in mind ahead of time what criteria are needed to pass asset adequacy analysis and issue an unqualified opinion. There is further guidance in the Life Practice Note on Asset Adequacy Analysis, December 2004, available from the American Academy of Actuaries (see questions 88 to 95). In the answer to Q90, it is stated, "In the end, it is the actuary's judgment as to the need to establish additional reserves subject to the chosen criteria. The basis of any judgment is typically documented in the supporting memorandum."

Many actuaries do not believe that cash flow projections need to pass all scenarios, although some actuaries (and sometimes regulators) take that position. However, when the discounted present value of ending surplus in several scenarios becomes negative, many actuaries establish additional reserves to raise the present value of at least some scenarios to at least zero. There seems to be even less guidance about when to release these reserves. Some of us have released reserves as soon as possible, even the next year, in spite of the potential to set up more additional reserves a year later. Others of us have retained additional reserves in future years until a higher standard is achieved (e.g., all scenarios are positive for all years). One of us has done both. The more years that low interest rates continue, the more we are asking if a long-term plan for additional reserves is needed.

We know that some companies have filed extra asset adequacy reserves in New York, for companies domiciled elsewhere. The New York Department of Financial Services has required (without publication) these companies to set their asset adequacy reserve at least as high as the present value of any ending negative market surplus in the New York 7 scenarios.

(We realize that the New York law specifically suggests this is not required.) For ending surplus, they accept the market value of assets less the cash values of most products and less the statutory reserve of term products. For a company domiciled elsewhere, the N.Y. asset adequacy reserve is reported in the New York supplement and not in the annual statement. If the New York asset adequacy reserve exceeds surplus, then an adverse opinion is provided to N.Y. and perhaps an unqualified opinion, even without any asset adequacy reserve, might be given elsewhere. Some actuaries have worded this New York "opinion" as something other than their opinion. It is really a formulaic reserve but more complex and allowing for some judgment about assumptions.

When an asset adequacy reserve is released or reduced, that should be disclosed in the opinion, Regulatory Asset Adequacy Issues Summary (RAAIS) and memorandum. No permission is required. Accounting guidance is fairly clear that the change in the asset adequacy reserve is a normal reserve increment but it is sometimes reported as a surplus adjustment. California requires that the cash flow testing be repeated, including the additional reserve and supporting assets, to verify that the problem has been eliminated.

Two of us often map or fit 10,000 random scenarios to the NY7 to calculate probabilities. We use methods of Longley-Cook or E. Chueh to map the scenarios. We then use the probability of the scenarios in computing the additional reserve or assessing the need for a reserve. In the last two years, the probabilities of the down scenarios have been very small. This may be a critique on the random scenarios we generate but does reflect the unusual times we are in.

Some of us believe that the asset adequacy reserve need not eliminate future statutory negative surplus. This is a test of asset adequacy. Will the cash flows from the investments and the premiums cover the benefits and expenses? Some regulators have tried to also make this a test of future solvency. That is a much higher standard that was not intended when cash flow testing was developed. Statutory reserves are intended to be redundant. To add an extra layer of security to that redundancy, we ask the cash flow question. Those who also demand future solvency are asking that the assets backing the current redundant reserves cover all future reserve redundancy.

If several moderately adverse scenarios would require an asset adequacy reserve that would result in an adverse opinion, must that be established immediately? At least one of us might make an exception. There is a difference between Company A, which we project will be in severe financial difficulty in 2015, and Company B, which we project will be in severe

Continued on page 10

difficulty in 2035. Some might argue that both are in severe difficulty now. However, it might be appropriate to establish only part of the otherwise needed asset adequacy reserve for Company B. After we get management's attention, they can be informed of alternatives and perhaps given a year or two to correct their problems. There are regulators who will discuss this in a meaningful way.

Should I Strengthen Traditional Reserves or Set Up AOMR Additional Reserves?

In considering which reserves to strengthen, there are several considerations. Traditional reserves that are strengthened cannot be released. Asset adequacy analysis reserves are more temporary, and can be established and released annually as the cash flow projections dictate. It would seem that traditional reserve strengthening is useful if there is a way to do so to solve a long-term product problem. In today's environment, we might think that given low interest rates, an annuity line with 3 percent minimum guarantees requires a traditional reserve fix,

even if it cannot be undone later. Another consideration is the tax reserve issue. Traditional reserves are tax reserves when the policy is issued, and traditional reserves set a ceiling on tax reserves. Asset adequacy analysis additional reserves are not tax reserves. The actuary will want to consider these issues in deciding which reserves to establish.

Conclusion

How to strengthen reserves is an issue that we expect will come up more frequently in the next few years. Our reflections above begin to examine criteria and examples of reserve strengthening. The economic era since 2008 clearly has raised issues not considered before 2000. We trust our examples are helpful, and we encourage further dialogue on this issue in future seminars, meetings and articles. We hope even more that the need for the dialogue will go away, but our expectation is that some continued dialogue will unfortunately be prompted by difficult economic conditions. ●




Donald M. Walker, ASA, MAAA, is the director—Life Actuarial Department for Farm Bureau Life Insurance Company of Michigan in Lansing, Mich. He can be reached at dwalker@fbinsmi.com.



Robert W. Guth, FSA, CERA, MAAA, is the appointed actuary for Everence Association, Inc. in Goshen, Ind. He can be reached at bob.guth@everence.com.



A. Grant Hemphill, FSA, FCA, MAAA, is senior actuary for Bruce and Bruce Company in Lake Bluff, Ill. He can be reached at ghemphill@babco.us.com.



Enterprise Risk Management Can Work for Smaller Insurance Companies

By Sharon Giffen

This article is a summary of two presentations sponsored by the Smaller Insurance Company Section. The first was a webcast on March 13, 2012, and the second was at the ERM Symposium on April 20, 2012.

The subject of enterprise risk management has been growing in importance over the last several years. For the actuary in a smaller insurance company, the concepts discussed may be either intimidating or sound completely unnecessary. The Smaller Insurance Company Section sponsored a webcast in March and a presentation at the ERM Symposium in Washington in April designed to specifically address the issues from a small company perspective.

The theme of both presentations centered on the idea that all companies can benefit from a sound risk management framework, and that it should be proportional to the risks in the company's business. The webcast featured five speakers:

- Jeremy Rosenbaum, CFA, analyst, Financial Services Ratings, Standard & Poor's
- Connie Dewar, FSA, FCIA, managing director, Life Insurance Group, Supervision Sector, Office of the Superintendent of Financial Institutions (OSFI)
- Todd Henderson, FSA, CERA, MAAA, vice president and chief risk officer, The Western and Southern Financial Group
- Lance Smith, CA, MBA, vice president, chief risk officer and chief internal auditor, Foresters
- Mark Milton, FSA, CERA, MAAA, senior vice president and actuary, Kansas City Life Insurance Co.

The ERM Symposium session featured myself, Mark Milton and added Amit Ayer, FSA, MAAA, adviser, Ernst & Young LLP.

The following represents a summary of the key concepts presented during these presentations.

Expectations of Risk Management

In both the webcast and the live presentation, the first speakers set up the reason companies should be incorporating enterprise risk management. Rating agencies have distinctly stepped up their expectations, and their methodologies now include an assessment of a company's risk framework. S&P reviews five components:

- Risk management culture
- Risk controls
- Emerging risk management
- Risk models
- Strategic risk management

Under each of these, a financial institution will be assessed against a range of indicators from least effective to strongest. These indicators will be included, among other factors, in the establishment of the rating for the institution.

Regulators, too, have recently taken a more formal approach to assessing risk management in institutions as part of their supervisory duties. Own Risk Solvency Assessment is being discussed in the United States as is Solvency II in Europe; these form the foundation of a risk-based solvency regime (as differentiated from the current factor-based approaches). In Canada, the risk-based approach to supervision is well established in OSFI. There is a clear emphasis in the review of institutions on risk and capital management using stress-testing techniques.

The Evolution of Risk Management in an Organization

It is well recognized that risk management is an evolving field and that each company will need to find the appropriate approach for its business. It also seems clear that what is acceptable today may be insufficient in the future. There is a need to continue to improve and expand risk thinking. This evolution was summarized as follows.

Continued on page 12

Siloed risk management

- Functional risk management
- Informal communication among risk managers
- Inconsistent risk management and measurement techniques
- Independent reporting to executives and directors

Organized risk management

- Centralized risk management administration
- Formal communication among risk managers
- Consistent risk management and measurement techniques
- Risk aggregation model mechanism (model)
- Overriding risk policy
- Coordinated reporting to executives and directors

Integrated risk management

- Organized risk management, plus
- Statement of risk appetite
- Articulated risk thresholds
- Risk-monitoring mechanism (dashboards)

Enterprise risk management

- Integrated risk management, plus
- Strategic deployment of capital
- Risk-adjusted performance measurement
- Emerging risk analysis
- Strategic risk analysis

One can easily assess a company’s practices in these categories to decide where they are along the spectrum of increasing sophistication. Clearly, too, this is an area where the appropriate proportionality can be assessed for a company’s individual circumstances.

Framework of Reporting and Governance

Another way of looking at this is to see the actual framework of risk management in an organization, where each of the elements above can be reviewed to see if there is a fit. One such framework is shown below.

Risk Appetite

One aspect of risk management that can be difficult is clear articulation of what and how much risk the company is willing to take to achieve its objectives. This is the risk appetite statement. While it is likely that most individuals in an organization would have an idea about their risk appetite, it is extremely unlikely that each person would say the same thing, unless it has been formally discussed, agreed to and documented. This statement can then be used to ensure alignment of decision-making to organizational objectives.

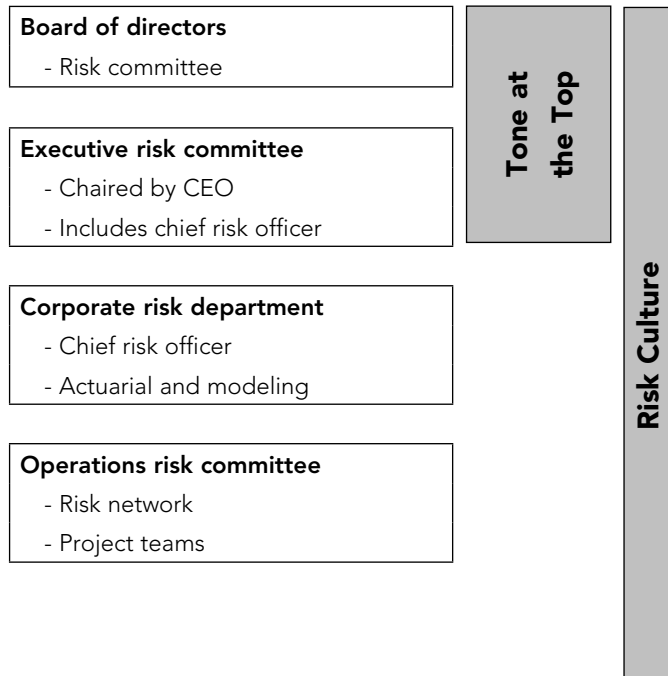
Generally, the statement would include both quantitative and qualitative measures. Quantitative measures may include statements about capital, earnings and a value measure, as well as statements regarding lines of business. Qualitative statements would address reputation, market position, ratings and regulatory standing.

Risk Management Framework

REPORTING

<p>Risk policy</p> <ul style="list-style-type: none"> - Risk appetite/tolerance
<p>Risk report</p> <ul style="list-style-type: none"> - Risk profile (heat map) - Discussion of high risks - Assess against appetite - Emerging risk identification
<p>Risk analysis</p> <ul style="list-style-type: none"> - Asset-liability management - Sensitivity/stress test - Pricing reports - Business cases
<p>Risk register</p> <ul style="list-style-type: none"> - Identify all risks - Likelihood/consequence - Measurements/triggers - Mitigation plans

GOVERNANCE



Tips and Challenges

Through the presentations, speakers were happy to share keys to success and pitfalls to avoid. Some of these are summarized here.

1. Risk discussions can and should lead to some tension. There will be different perspectives offered by the leader of sales, the operational leader and the chief actuary. These are to be expected, and need be worked through to achieve a common understanding of the goals.
2. Small companies tend to have risk as an add-on to someone's responsibilities. While a challenge to time management, risk thinking must be shared among all decisionmakers—which is the goal in the end, anyway.
3. The degree to which modeling is essential varies from company to company depending upon the specific risks inherent in the business. A company with only traditional participating whole life business has a different need from a company with variable annuities with living benefit guarantees.
4. Ensure there is a forward-looking aspect to risk management. It is easy to point out the failure of risk management after a flaw has manifested itself. The real goal is to find the leading indicators, so that such circumstances can be avoided.

5. Risk management is most effective when conducted simultaneously bottom-up and top-down. Line staff are highly likely to be the first to be able to identify a trend in the business; success is more likely if they know what to look for. At the same time, if the board has no interest, and incentives for senior management do not have a risk management orientation, then any program can fail from inattention.
6. Reporting dashboards or “heat maps” should be constructed in a way that integrates information and allows quick assessment of current conditions. Of course, it is critical to have robust, reliable and assessable data sources.

Conclusion

Enterprise risk management is an important and evolving discipline in the insurance business. Even in companies with relatively low technical risk, there are still many landmines that can derail a company's strategy. Additionally, the current low interest rate environment has highlighted that even companies with a conservative stance can find themselves more at risk than they had expected. And, who knows what the next risk to emerge that we will all need to manage will be? ●

Sharon Giffen, FSA, FCIA, MAAA, is president, Foresters Canada, and president and CEO, Foresters Life Insurance Co. in Toronto, Ontario, Canada. She can be reached at sgiffen@foresters.com.



Recent and Upcoming SOA Meeting Sessions of Interest to SmallCo Members

By Donald M. Walker

The Smaller Insurance Company Section sponsored three sessions at ValAct, held Sept. 10-11 in Los Angeles.

Valuation Actuary Symposium

How Can Smaller Companies Respond to the Low Interest Rate Environment (workshop)

Mark Rowley of the SmallCo Low Interest Rate Team led a workshop on the impact of low interest rates, with the emphasis on the challenges for smaller companies. Attendees participated in an in-depth review of this timely topic.

Smaller Company Issues (buzz group)

Don Walker led the annual smaller company buzz group. As always, we recruited some great facilitators to make this networking opportunity one of the best sessions at ValAct. Those who attended shared concerns and ideas with fellow small company actuaries.

Smaller Insurance Company Chief and Corporate Actuaries Forum

Don Walker and Mark Rowley led our annual forum for actuaries in leadership positions at small companies. Attendees talked about issues of general interest at lunch, then broke into smaller discussion groups to delve into more specialized topics. This is our 10th year sponsoring this very popular attendee-driven forum on the afternoon of day 2.

Annual Meeting

SmallCo has planned four events for the SOA Annual Meeting & Exhibit in National Harbor, Md.

Low Interest Rates: Financial and Product Implications (co-sponsored with the Financial Reporting Section)

Building on our year-long efforts to explore this issue, SmallCo members will be part of a panel discussion on low interest rates.

Reinsurance Challenges for Medium and Small Companies (co-sponsored with the Reinsurance Section)

Mike Kaster will lead this panel discussion.

Smaller Company Issues (buzz group)

Our regular buzz group session at the annual meeting. (Just as great as the one at ValAct!)

Smaller Insurance Company Hot Breakfast

Our regular hot breakfast at the annual. Meet council members and break bread with fellow small company actuaries.

As you can see, SmallCo is dedicated to providing value to our members by sponsoring a variety of events at SOA meetings. We hope you can join us at future meetings! ●



Donald M. Walker, ASA, MAAA, is the director of the Life Actuarial Department at Farm Bureau Life of Michigan. He can be reached at dwalker@fbinsmi.com.

Leading Contributors to Mortality Risk in Life Insurance Applicants

By Jim Palmier, M.D., Ammon Dixon and Brian Lanzrath

Editor's note: *This article is a continuation of an article published in the January 2012 edition of smalltalk. Inclusion of articles in smalltalk are for informational and educational purposes only and should not be considered an endorsement by the Smaller Insurance Company Section Council.*

Stratification of mortality risk in prospective insured individuals is a central function of underwriters, but one upon which the performance of actuaries' pricing projections is ultimately dependent. Until recently, life insurance underwriting was a relatively unsystematized offshoot of clinical medicine, tending to reflect the diagnostic preoccupations of practicing physicians concerned with the diagnosis and treatment of discrete medical conditions. In the last 12 months, Risk IQ, a data-analytics-driven prognostic system developed specifically for all-cause mortality prediction in life insurance applicants, has become a core element of the underwriting process at several major insurers. This de novo approach to applicant mortality prediction has generated a number of novel insights into the relative importance of various laboratory and biometric measurements, many of which are at odds with more conventional underwriting paradigms.

As discussed in the January 2012 *smalltalk* article "Modeling Mortality in Life Insurance Applicants," Risk IQ is derived from a multivariate analysis of the laboratory results and physical measurements of more than 6 million life insurance applicants. The final result is a single, global rating of mortality risk (expressed as a percentile ranking); however, a necessary intermediate output is a matrix of risk coefficients

for each of the more than 140 variables assessed in each of 10 demographic groups (males and females, 18 to 29, 30 to 39, 40 to 49, 50 to 59, and 60 to 79). The product of each of these coefficients and the appropriate lab/physical variable for a given applicant is the mortality contribution of a specific variable in a specific applicant (which may be either positive or negative). Aggregating these contributions into analytically meaningful groups (e.g., a lipid panel, a serum protein panel and various combinations of closely related liver function assays), and averaging their absolute values within a demographic, we are able to assess the relative importance of each for a given sex and age range. It is important to recognize that this process generates a population-level, not an applicant-level, metric of variable relevance. Under this method of assessment, a hypothetical test for a condition with a prevalence of 50 percent and a mortality effect of 10 percent would be ranked well above a test for a condition with a prevalence of 0.1 percent and a mortality effect of 300 percent. Although final Risk IQ scores are normalized by cotinine (tobacco-use) status, coefficients for this analyte are generated as part of model development and have been included here for the sake of completeness.

"The final result is a single, global rating of mortality risk (expressed as a percentile ranking). ..."

The table on page 16 lists the five underwriting variables with the largest effects on each demographic group, in descending order. In males, the two liver function test (LFT) groups are uniformly the most important predictors of risk, regardless of applicant age. The gamma-glutamyl transferase (GGT)-alkaline phosphatase (ALP) LFT group likewise dominates the assessment of women between the ages of 30 and 59, while aspartate aminotransferase (AST)/

Continued on page 16

alanine aminotransferase (ALT) never rises above the third rank. The serum protein panel tends to follow the LFTs in younger applicants, while the relevance of urine protein (UPROT) and urine creatinine (UCREAT) increases steadily with age, becoming the dominant predictors in females age 60 to 79. Women under 30 are the clear outlier (as is often the case in mortality analysis), with a contributor ranking headed—perhaps counterintuitively—by the lipid panel, and including fructosamine, an analyte that is not among the leading five in any other group. Interestingly, fructosamine’s second-highest standing is among males under 30, where it is ranked seventh (not shown).

Top Five Underwriting Variables for Males and Females 18 to 79

Age	18 to 29	30 to 39	40 to 49	50 to 59	60 to 79
Females	Lipid panel	GGT-ALP	GGT-ALP	GGT-ALP	UPROT/UCREAT
	Fructosamine	Pulse	UPROT/UCREAT	Protein panel	GGT-ALP
	Protein panel	Protein panel	AST/ALT	Lipid panel	Protein panel
	AST/ALT	AST/ALT	Protein panel	AST/ALT	AST/ALT
	GGT-ALP	Build/eCCr	Cotinine	Pulse	Build/eCCr
Males	GGT-ALP	GGT-ALP	GGT-ALP	GGT-ALP	AST/ALT
	AST/ALT	AST/ALT	AST/ALT	AST/ALT	GGT-ALP
	Protein panel	Protein panel	UPROT/UCREAT	Build/eCCr	UPROT/UCREAT
	Lipid panel	UPROT/UCREAT	Protein panel	UPROT/UCREAT	Protein panel
	Cotinine	Lipid panel	Build	Protein panel	Lipid panel

Lipid Panel:	Total cholesterol HDL cholesterol Triglycerides LDL cholesterol Ratios of above	Protein Panel:	Serum albumin Serum total Protein Serum globulin Ratios of above	AST/ALT: (Liver function)	Aspartate aminotransferase Alanine aminotransferase Ratios of above
GGT-ALP: (Liver function)	Gamma-glutamyl transferase Alkaline phosphatase		eCCr:	Estimated creatinine clearance	

The relative status of cotinine may be among the more counterintuitive findings of this analysis; it appears in the top five contributors of only two of the 10 demographic groups, and even then only in fifth place. The mortality effect of tobacco use is obviously substantial (approximately doubling risk on a multivariate basis for all groups), but its prevalence is comparatively low (9 percent in our data). Other, continuous variables, such as the LFTs, make contributions to risk assessment in all applicants, even when the values are well within the “normal” range. The lipid panel and build are also both ascribed much less importance in our analysis than in a typical underwriting context; with these variables, it is the lack of uniqueness (orthogonality) that limits their value in a multivariate system such as Risk IQ. In males 40 to 49, total cholesterol has a correlation coefficient of 0.20 with total protein, 0.16 with GGT and 0.18 with fructosamine, among many other variables. The partial multicollinearity of body mass index (BMI) with other profile variables (particularly AST/ALT) is stronger still—and most of these offer additional information, as well.

Taken as a whole, these results reinforce an emerging consensus on the centrality of the LFTs (particularly GGT) to the underwriting process, and serve as a reminder of the often-overlooked protein panel's importance—especially, though by no means exclusively, in younger applicants. They

also reiterate the premise of earlier “Hidden Healthy” findings—that, *given a multivariate analysis of other variables*, the lipid panel and applicant build may be of significantly less relevance than is traditionally assumed. ●

Jim Palmier, M.D., MPH, is medical director for ExamOne in Lenexa, Kan. He can be reached at James.A.Palmier@ExamOne.com.




Ammon Dixon, MAOA, is head of risk analytics for ExamOne in Lenexa, Kan.



Brian Lanzrath is an actuarial biostatistician for ExamOne in Lenexa, Kan.





Access to Reinsurance by Smaller Insurance Companies

By W. Michael Reese

Editor's note: This article first appeared in the March 2012 edition of *Reinsurance News*, the newsletter of the Reinsurance Section. It is reprinted here with permission.

Life reinsurance is a universally recognized risk management tool protecting insurance company surplus levels. Smaller insurance companies, who oftentimes benefit the most from establishing prudent risk management practices, have reported unique challenges in securing life reinsurance. Commercially feasible life reinsurance risk management solutions for smaller insurers are in the best interest of the life insurance industry as a whole because of the value in protecting company surplus and solvency.

A research project, sponsored by the Committee on Life Insurance Research, the Smaller Insurance Company Section and the Reinsurance Section, was kicked off in late 2010 to investigate the challenges on both sides of this issue. The final report was released in October 2011 and is available on the SOA website.

The purpose of the research was to: (1) identify the challenges and successes encountered by smaller insurers in obtaining life reinsurance, (2) identify the challenges and opportunities life reinsurers face in servicing smaller companies, and (3) explore solutions to resolve the challenges identified. The knowledge from this research is intended to assist actuaries, smaller insurers, reinsurers and others in optimizing their respective success in future reinsurance endeavors.

Two surveys were designed and used to gather information for the study. The first was sent to reinsurance companies and brokers, and the second was sent to smaller insurance companies. For the purposes of this research study, smaller company was identified as any company that sells life policies and has assets of \$2.5 billion or less.

Information requested in the reinsurer/broker survey included:

- Benchmarks used to identify prospective clients;
- Types of reinsurance treaties available above and below benchmarks;
- The amount of individual life risk assumed from companies above and below the established benchmarks;
- Other services available above and below the established benchmarks; and
- Issues reinsurers have experienced with smaller insurers.

Information requested in the smaller insurance company survey included:

- Company size in total assets;
- New business ceded 2007 – 2009;
- Direct and ceded in-force as of 12/31/2009;
- Maximum retention limits;
- Reasons for buying reinsurance;
- Types of reinsurance used to cede risk; and
- Identification of challenges experienced.

As a follow up to the surveys, telephone interviews were conducted to clarify responses and dig deeper into the information gathered in the survey responses.

I encourage you to refer to the final report on the SOA website for the nitty-gritty details of the survey responses, but the following are highlights I pulled from those details:

Reinsurance Survey

1. Some reinsurance companies use benchmarks to select viable business partners and some do not. In addition, one of the reinsurers said they make exceptions to the benchmarks when the right opportunity comes along.
2. Generally, the benchmarks are related to minimum

annual new business requirements coupled with due diligence—e.g., company ratings, staff and administrative capabilities, etc.

3. Typical reinsurance treaties (e.g., YRT, Coinsurance, Bulk ADB) are available for client companies without regard to benchmarks. More sophisticated coverages, like surplus relief and stop loss, are only available above benchmarks.
4. Services other than risk sharing are available to client companies without regard to benchmarks, like use of the reinsurer's underwriting manual and access to underwriting, claims and actuarial staff. However, product design and development of underwriting guidelines are only available above benchmarks. In no case was there an indication that the reinsurer charged a fee for these additional services.
5. Regardless of benchmarks, the top two challenges reported by reinsurers were low sales volume and no mortality or persistency experience.

Smaller Insurance Company Survey

1. Just over half of the respondents said they have experienced reinsurance challenges.
2. About half of the responding companies were Fraternals.
3. Of the 23 responses we received, the four largest companies averaged \$1.9 billion of assets, and the remaining 19 companies averaged \$332 million of assets.
4. The average face amount issued in 2007 – 2009 was \$90,181 for companies that said they experienced challenges (challenge companies), and \$64,294 for companies that said they did not experience challenges (no-challenge companies).
5. In 2007 – 2009, the challenge companies ceded 36 percent of their new face amount, and the no-challenge companies ceded 16 percent of their new face amount. Follow-up interviews showed that the no-challenge group sold more simplified and guaranteed issue busi-

ness, which certainly helps explain why their average face amounts and ceded amounts were lower.

6. The average face amount in force for the challenge companies as of 12/31/2009 was \$139,833, and for the no-challenges companies the average was \$39,372.
7. The maximum retention amounts for the two groups are very similar—\$194,000 for the challenge companies and \$220,000 for the no-challenge companies.
8. The top four reasons indicated for “why reinsurance is needed” are:
 - a. Limit per policy risk;
 - b. Control claim fluctuations;
 - c. Get facultative underwriting support; and
 - d. Gain access to the reinsurer's underwriting manual.
9. Regarding types of reinsurance used, no discernible difference exists between the challenge companies and no-challenge companies.
10. The number one challenge for smaller insurance companies was that the price of reinsurance was too high.



Summary and Solutions

In general, there was a fairly low response rate to both surveys. Perhaps the reinsurers that did not participate simply are not interested in the small company market. However, there is at least one reinsurer out there that is very willing to work with smaller insurers, and at least one that will work with companies below their benchmark when the right deal comes along. Also, I know from my own experience that other reinsurers (that did not participate) will do business with smaller companies when the right opportunity presents itself.

Does the low response rate from smaller insurers mean that there is no issue? That is certainly a possibility, but the survey responses show that challenges are out there. Of course, all business deals may present challenges, and it is

Continued on page 20

evident from the numbers that even the companies within the challenges group have found ways to deal with the market as it currently exists. This fact was reinforced at the annual meeting during Session 135 where these research results were presented, when 91 percent of the direct writers in attendance indicated they have had challenges, but 83 percent of those said the challenges were overcome.

During Session 135, 70 percent of reinsurers in attendance (they made up 58 percent of the audience) indicated that they have benchmarks, but they make exceptions, and 25 percent said they don't use benchmarks at all.

So, one solution is—keep trying. There is a reinsurance market for smaller insurers. As one of the reinsurers pointed out during the follow-up interview, smaller insurers may sometimes have to pay a little more for their reinsurance versus the larger companies who can demonstrate that they have very low and stable mortality results, but with careful product development those costs can certainly be priced into a viable product.

A second solution, since we know there is a reinsurance market for smaller insurers, is to make sure you are prepared when you approach the market for reinsurance placement. Don't be reluctant to seek the help of a broker or consultant, and if you do approach the market on your own, make sure you are prepared. A list of items you may want to consider having available before you ask for a quote is included at the end of this article. Reinsurance actuaries, just like all actuaries, love getting too much information. The more you can provide up front, the better the negotiations should progress.

Another possible solution is a pool approach for smaller insurers. During discussions and interviews, the researcher heard of two instances where development of pools has been attempted. One was an attempt by the American Fraternal Alliance (then the NFCA) to get some of the larger Fraternal to set up a risk-sharing pool for smaller Fraternal. However, it is the understanding of the researcher that this idea did not come to fruition.

Another attempt to set up a small company reinsurance pool was made around 2005 by a consulting actuary. At least two reinsurers were approached with the idea, but again the attempt did not gain any momentum.

While attempts to establish a small company reinsurance pool have been made, this idea remains a potential solution.

The following structure for a pool might work if the right people and companies support the approach:

1. Use a standardized full medical application and provide specific instructions to be used during the marketing process;
2. Develop two or three standardized life products (pre-filed for use in all states) that are available only for policies ceded into the pool (e.g., WL, 10-year term, 20-year term, UL);
3. Each specific company, once approved by the pool reinsurers, would be allowed to put its logo and company-specific information on the pool application and products;
4. Use a TPA for all underwriting and claims;
5. Allow each company to issue and administer the policies on their system once the issue decision has been made by the TPA. This is an important point for most companies, but especially for Fraternal who want to make sure they are connected with and engage their clients in their specific fraternal endeavors; and
6. A decision would have to be made regarding ongoing administration of the reinsurance, including reinsurance premium billing, settlements and quarterly reporting. It is likely that only the very smallest insurers will not be able to handle the administration issues.

Things to Think of and Prepare Before You Approach the Reinsurance Market

The following is a suggested list of information you should consider providing prior to asking a reinsurer to provide a reinsurance quote;

1. Provide a copy of the basic policy forms, riders and applications you want included in the reinsurance treaty. If state specials are significantly different, make sure you provide those as well;
2. Provide premium rate tables and policy fees/factors used to calculate policy premiums;
3. Have available an actuarial report on the product development and pricing results and assumptions, should the reinsurer ask for it;
4. A copy of your actuarial state filing memorandum provides a good product summary for the reinsurance pricing actuary—along with reserving methods and information about underlying guaranteed elements;
5. A summary of your underwriting rules and methods;
6. Information regarding your claims and underwriting staff is important. If possible, arrange a conference

call and introduce your staff. It will help build a comfortable relationship with your potential reinsurer;

7. Make sure you have some idea of the type of arrangement you are looking for (YRT, coinsurance; excess or quota share) and communicate that preference to the reinsurer. They may suggest alternate approaches, but it is very helpful to provide a starting point. Some companies even let the reinsurers know what YRT rates or coinsurance allowances they are looking for, and this helps provide a framework for the negotiations; and
8. Provide information about how your product will be marketed (e.g., captive agents, brokers, direct marketing, etc.) and provide an estimate of the first two to three years of production. If possible, the production

estimates should provide by issue year, age range, gender, underwriting class, average face amount and projected net amount at risk for universal life business.

In conclusion, it is clear that challenges do exist for smaller insurance companies. However, with the right approach you should be able to find reinsurance solutions to all your risk sharing needs. ●

W. Michael Reese, ASA, MAAA is a consulting actuary with Hause Actuarial Solutions in Overland Park, Kan. He can be reached at miker@hauseactuarial.com.



Regulatory Update

By Norman E. Hill

This article was written on Sept. 23, 2012. I was surprised to see that, for the principle-based reserves (PBR) portion, in 2012, the topic remains as time sensitive as in prior years. Therefore, I recommend that readers continue to monitor developments. The Smaller Insurance Company Council provides supplementary blast emails as we have breaking news.

Solvency Modernization Initiative-Statutory Accounting

Several times recently, I've heard hints dropped from regulators, including prominent regulators, about scrapping statutory accounting (SA) and substituting some type of GAAP. The only argument advanced for such radical change is that U.S. GAAP is likely to be replaced by international GAAP (IFRS) and therefore SA *must* cease to exist.

In my opinion, this argument is without foundation. While SA is defined as U.S. GAAP with adjustments, SA is completely codified and self-contained. Adjustments are all built in, so no separate GAAP reference is required. Even though new GAAP proposals are routinely discussed by the National Association of Insurance Commissioners (NAIC), there is no requirement for adoption or even discussion. If IFRS replaced GAAP, fully codified SA could remain just as it is and function.

One major problem could arise under IFRS as the new statutory. The IFRS reserve basis is a form of gross premium reserve (GPV) with annual assumption changes. With early principle-based reserves (PBR), many felt that GPV was not acceptable as an underlying statutory basis for federal income taxes. This gave rise to Net Premium Reserves (NPR) as a PBR floor, and under IFRS, could cause an entire new set of complications.

AG38 Controversy Re: Statutory Reserves for Universal Life with Secondary Guarantees
Much universal life with secondary guarantees (ULSG) is

sold as de facto term, with level guaranteed no-lapse premiums. The intent of AG38 was that these premiums, when in effect, would be reserved on a long-term basis. However, it recently came to light that some insurers were making minor adjustments to premiums that allegedly were supported by a Practice Note that allowed them to reserve ULSG on a Yearly Renewable Term (YRT) basis when these long-term, no-lapse premiums were in effect.

The Life Actuarial Task Force (LATF) issued a report, precluding this YRT practice. However, one EXWG NAIC parent overruled part of this report. For new issues apparently after 2012, an approach close to stringent LATF reserving would be required. However, three safe harbor provisions are included for these products. For ULSG sold before this date, a form of GPV would be allowed, subject to an independent actuarial review. These reserves would be subject to separate asset adequacy testing, with an attempt at achieving uniform actuarial assumptions and methods.

This amendment to AG38 was approved by Executive/Plenary on a Sept. 12, 2012 conference call.

PBR—Current Status through Sept. 12, 2012

The main PBR governing document is a section of the new Valuation Manual (VM) labeled VM20. After nearly seven years in development, VM20 for life has been reasonably stable for several years. Several portions, especially a somewhat liberalized mortality assumption, were amended, although not with complete consensus. Adoption of VM by LATF occurred on August 2, 2012. Its parent A Committee adopted VM on Aug. 17, 2012 by a 10-to-3 vote. Of the three no-adoption votes, only New York actually voted against, and all three states raised only the problem of scarce regulatory testing resources. The next approval step is Plenary.

VM includes many portions besides VM20, such as scope (VM00), definitions (VM01), non-forfeiture (removing the historic link between and PBR interest, VM02), PBR report-

ing formats (VM30 and 31), variable annuities, (VM21), non-variable annuities and health (currently left on statutory in VM22 and 25, subject to later post-adoption PBR proposals), and mandatory experience reporting (VM50 and 51).

Both credit and preneed products are exempt from PBR reserves, although preneed is subject to mandatory experience reporting. Companies with under \$50 million direct life premiums are exempt from this reporting. Only new issues after legislative adoption are covered by PBR reserves, and, even then, companies may defer adoption for another three years.

The new VM and Standard Valuation Law (SVL) make some provision for actuarial judgment in setting PBR reserves. However, section 11G of the new SVL allows any state commissioner to require revisions to PBR reserves for any admitted company if he believes reserve assumptions are unsound.

Once Plenary adoption by a super majority takes place, the NAIC's goal will then be to send a package of the new SVL, authorizing PBR, and VM itself, to state legislatures for 2013 approval. Similar to Plenary requirements, super majorities in legislatures will also be required—42 of 55 jurisdictions representing more than 75 percent of aggregate life and health industry premiums.

Unexpectedly, at an Executive Committee/Plenary call on Sept. 12, 2012 the A Committee chairman requested deferral of VM adoption by this group. The chairman said new issues had arisen (but with no further explanation), and added a later conference call for approval would be scheduled.

PBR and VM20—Key Provisions as of Sept. 12, 2012

First, all products must undergo a Stochastic Exclusion Test (SET), with two versions. The more stringent SET involves computing 16 GPV scenarios, based on stipulated interest rates. A ratio is computed, with the numerator equal to the excess of the worst GPV scenario over the base GPV, and the denominator equal to the present value of benefits for the base scenario. If this ratio is less than 4.5 percent, the product has passed.

As an alternative, an actuarial certification can be prepared, stating that the product does not possess material asset or investment volatility risk. A robust, well-documented asset adequacy test may suffice for this test, but other alternative evidence may also be provided. This alternative is not available for ULSG or variable life, although it is for term.

If SET is failed, three reserve sets must be computed for the product—stochastic, GPV and NPR—the latter two serving

as floors to stochastic. The expectation is that most ULSG will fail SET. Also, the actuary has to be prepared to demonstrate that any simplifications in computing these reserves do not materially understate results.

If SET is passed, another test is made, the Deterministic Exclusion Test (DET). This test is a comparison of the product's net valuation premiums versus gross premiums. If net (presumably for the entire product) exceeds gross, DET is failed. PBR reserves for the product must then be based on GPV with an NPR floor. If SET is passed, reserves revert to Commissioner's Reserve Valuation Method (CRVM) statutory. The expectation is that many term products will fail DET.

NPR itself is CRVM statutory for traditional products and certain types of term and ULSG. The latter two must still be defined, although they should represent the more traditional varieties. For more competitive types of term and ULSG, NPR as ultimately defined in VM20 would most likely represent the reserve floor.

Expense assumptions in GPV and stochastic reserves should represent a fully allocated approach, but also assume a going concern. In my opinion, this would allow reasonable adjustment to current unit expenses to the level of a critical mass of operations.

As a result, VM20's current methodology would allow most traditional products to retain current CRVM statutory.

One other VM aspect should be mentioned. The above exclusion tests are not mandatory. If companies wish, and see value, they can reserve on a full stochastic or GPV basis, with appropriate floors.

A revised mortality proposal was presented by the American Academy of Actuaries (the Academy) and labeled as a simplification. Under this approach, blending of industry experience with less than fully credible company experience is no longer required. Instead, company experience may often be fully used initially, for a prescribed number of durations. This number depends on credibility of company data and also its volume, and was reduced from the Academy's recommendation. The lower the credibility and volume of data, the lower the number of years allowed. Company experience must then be graded to an industry table. The rapidity of grading is also determined by credibility and volume. Without full consensus, LATF adopted most of the Academy's proposal.

Since current VM20 deals with all life products (and may be labeled full scope PBR), there will likely be some additional expense for small companies. Even for those selling only traditional products, completing even simplified exclusion tests

Continued on page 24

will require some additional time, if done internally, and some additional expense, if done through a consultant. However, compared to full stochastic reserving, as required seven years ago, my opinion is that additional expense should be noticeably lower.

New PBR Proposed Amendments

Despite A Committee adoption of a VM version as of Aug. 17, 2012, several new amendments to PBR, primarily VM20, have been proposed. The first two below were discussed on a Sept. 20, 2012 LATF call, one of several scheduled through early November. In my opinion, methodology covered by these amendments is more substantive than mere clarification.

1. On GPV and NPR reserves, intended as floors. This wording may make it more difficult to use aggregate groupings as floors, rather than seriatim policy by policy floor comparisons with the stochastic base.
2. On term products with higher renewal premiums, require actual experience of favorable cash flows in these durations before allowing inclusion in reserve assumptions.
3. On Economic Scenarios for GPV and stochastic reserves, require tightened requirements for the SET Scenario 12 and, for all Economic Scenarios, a prescribed average historic formula for a dynamic mean reversion rate for 20-year treasuries.
4. Further tightening of the mortality assumption, limiting the number of years for mortality data to be considered sufficient and moving up the duration when grading to an industry table must begin and be completed.

The LATF chairman indicated that numerous other amendments would be considered by LATF.

Post-LATF Adoption Areas Related to PBR and VM20

The ACLI pledged that it would support the VM through the 2013 legislative approval process. However, it expected resolution in 2012 of several critical areas:

1. Satisfactory completion of a small-scale impact study to supplement the major one from several years ago. Involving around 10 companies, this test would primarily

analyze the liberalized mortality assumption on ULSG. As of the writing of this update, impact study results have not been released by ACLI. Also, newly proposed amendments to PBR methodology could significantly affect results of this latest study and even call for another test version.

2. Official NAIC installation of a process for ongoing VM changes after legislative adoption. This process should correspond to RBC changes.
3. NAIC resolution of the question of independent actuarial reviews of PBR calculations, to address widespread concern over limited state regulatory resources.

Other Regulatory Area Related to PBR and VM20

For RBC, C3Phase3 for life companies will probably be revisited after VM completion. A complete report from the Academy was submitted several years ago. Although full stochastic reserves are the proposed base, exclusions are available for small companies and others. These include the same SET as under PBR (before the liberalized alternative version) and an Alternative Amount, based on a similar type of actuarial certification for products deemed less risky.

Other Regulatory Area—Own Risk Self-Assessment

This Model Act, stating own risk self-assessment (ORSA) requirements, was also adopted by Executive/Plenary on Sept. 12, 2012. Company groups with under \$500 million premiums are exempted. ORSA requires company-wide projections and analyses of experience under a broad range of scenarios. Both current and new business, as well as surplus and balance sheets, must be included. If a Commissioner requires, companies otherwise exempt may also have to provide these projections.

Summary

Even though some simplifications have been made, many regulatory requirements and proposals are quite complex and require detailed study. As always, small companies need to stay alert to all new developments. The latest VM deferral and further proposed amendments further complicate the issue. The main question for VM and PBR is, will a version be finally adopted by Executive/Plenary by Dec. 31, 2012 and, if so, which version? ●



Norman E. Hill, FSA, MAAA, is president of NoraLyn Ltd. in Gilbert, Ariz. He can be reached at nhill@noraly.com.

Blast Emails Get SmallCo News Out Faster

By Mark Rowley

This article presents an update of recent blast emails sent to SmallCo section members.

One of the goals of the Smaller Insurance Company Section (SmallCo) is to disseminate items of interest to our members on a timely basis. One of the best ways to do this is to publish blast emails. In this article, I have included excerpts of blast emails that have been sent out over the last year. A benefit of being a SmallCo member is that you receive these blast emails and get the information more promptly than people who have to wait on the newsletter. I hope you find this information as interesting and useful as I do.

Life Insurance Valuation and Nonforfeiture Interest Rates May Drop (for business sold in 2013)

It is virtually certain that the most commonly used life insurance valuation rate will drop from its current 4 percent to 3.5 percent, to take effect with Jan. 1, 2013, issues. This would be the first change in the valuation rate since 2006. A lower interest rate will increase statutory and tax reserves, and affect the pricing/profitability of life insurance products.

Reserves for life insurance are determined using a valuation rate set by a formula in the Standard Valuation Law. The reference interest rate for life insurance is the lesser of the 36-month or 12-month average (of the composite yield on seasoned corporate bonds) for the period ending June 30 for contracts issued in the next calendar year. Since 2006, this valuation rate has been at 4 percent and the corresponding nonforfeiture rate has been at 5 percent.

The maximum nonforfeiture interest rate will drop from 5 percent to 4.5 percent, to take effect with Jan. 1, 2014, issues (companies are allowed a year to implement a nonforfeiture

interest rate change). This will cause products to be refiled with insurance departments, unless they were filed with dynamic nonforfeiture information.

It is a good practice for company actuaries to monitor the pattern of interest rates. Three websites we have found helpful in monitoring interest rates are:

<http://www.dfs.ny.gov/insurance/life/ilifemax.htm>

<http://www.lifebase.com/ValuationInterestRates.aspx>

<http://www.hauseactuarial.com/interestrates.asp>

If interest rates get even lower in the future, the life insurance valuation rate could drop to 3 percent and the nonforfeiture rate would drop to 3.75 percent. This causes significant challenges related to whether life insurance using a 3.75 percent nonforfeiture rate meets the IRC Sec. 7702 definition of life insurance.

Federal Reserve Action to Keep Interest Rates Low

The Federal Reserve has taken action over the last few years to keep interest rates low in an effort to stimulate the economy. The Fed has the most control of the short end of the yield curve; the federal funds rate has been low for several years.

This allows banks to borrow at a very low rate and reinvest in Treasuries, making a spread without taking much risk. Of course, banks can also lend the money to consumers or businesses. The spread banks enjoy makes the Fed policy attractive for banks.

The same thing cannot be said for insurance companies. The impact of the Fed policy is to keep short-term rates low, but it also has some impact on all points of the yield curve. Insurance

Continued on page 26

companies typically cannot borrow at the federal funds rate. Lower interest rates have compressed spreads for insurance companies, especially on older blocks of business with higher interest rate guarantees. This puts pressure on profitability.

At this time, we do not know how long interest rates will remain low. The Fed suggests it will hold rates low until 2014. However, the history from the Great Depression was that interest rates were low for the entire decade of the 1930s and were then climbing only very slowly during the 1940s and 1950s. If a similar pattern recurs, the stress on insurance com-

pany spreads might continue for a long time. On the other hand, if interest rates were to rise rapidly by 3 percent to 5 percent as they did in the 1970s, life insurance companies will experience stress from policy lapses as annuity policyholders move to higher-paying products. Neither a delayed slow rebound nor a fast rebound from low interest rates would be painless for the insurance industry. Of course, there are other scenarios, such as a gradual rebound in rates that starts soon, that would be much less painful. Given the uncertainty with interest rates, it is important for actuaries to test for a wide range of interest rate scenarios. ●



Mark C. Rowley, FSA, MAAA, is vice president, managing actuary with EMC National Life in Des Moines, Iowa. He can be reached at mrowley@emcni.com.

People Who Aren't SOA Members Can Belong to SmallCo!

Just because a person isn't a member of the Society of Actuaries doesn't mean they can't be part of the Smaller Insurance Company Section.

SmallCo membership might benefit nonactuaries in companies without an actuary. Such a person can't use section membership to say they are an actuary or a member of the SOA, but they can get access to information that might help them do their job better.

Section membership might also benefit actuarial students.

If you know someone who is not an SOA member but might benefit from SmallCo, please recommend us to them. Contact Jerry Enoch at JEnoch@alfains.com.

Remember: Dues are only \$25 per year.



Mortality Table Updates—2012

By Karen Rudolph

The Society of Actuaries (SOA) is uniquely positioned to conduct research to provide actuaries with the mortality and morbidity tables necessary to evaluate risks. These tables are used in industry applications and statutory valuation. Recently, joint teams of SOA and American Academy of Actuaries (the Academy) volunteers have been busy on several such projects. This article provides a summary of their work.

2012 Individual Annuity Mortality Basic (2012 IAM Basic) and Individual Annuity Reserve (2012 IAR) Tables

This recently developed table is based on the SOA's 2000-04 Individual Payout Annuity Experience Report, dated April 2009. The 2012 IAM Basic and IAR tables, together with projection scales, are available at http://www.naic.org/documents/committees_lhatf_exposure_2012_ind_ann_res_tbl.pdf. When compared to the valuation of lifetime payout annuities based on the A2000 annuity table, the report finds a 9.9 percent increase in reserves at issue for an age 65 male, and an increase of 15.1 percent in reserves 10 years after issue. Reserve increases for other payout annuity structures can be found in the report.

Experience data covering 2005-08 is being finalized and will be compared to the developed table.

2014 Valuation Basic Table (2014 VBT) and Commissioners Standard Ordinary Mortality Table (2014 CSO)

Work is underway on a new VBT/CSO mortality table. The 2014 Valuation Basic Table Team of the SOA & AAA Joint

Project Oversight Group will develop both a valuation basic table and a commissioner's standard ordinary table to replace the 2008 VBT and 2001 CSO. This group has completed their preliminary analysis of the select period, mortality improvement and graduation approach. The data contributing to the table development is the 2002-09 experience mortality. The set of published tables is expected to include aggregate and preferred risk tables. Expect to hear more news about the development of these tables toward the end of 2012.

Guaranteed Issue, Simplified Issue and Preneed Insurance Tables

New to the array of valuation mortality tables will be three distinct tables applicable to individual guaranteed issue insurance, individual simplified issue insurance and preneed insurance. The effort behind development of these new tables belongs to the SOA & AAA Joint Project Oversight

Group, its members and supporting subgroups. Information on the development of these tables comes in part from the March 1, 2012, presentation by Mary Bahna-Nolan, chair of the AAA's Life Experience Subcommittee, to the Life Actuarial Task Force of the National Association of Insurance Commissioners (NAIC). One data call went out to the industry in support of these tables, which resulted in 36 total company submissions. Fifteen companies submitted guaranteed issue data covering 6.4 million policy years, 33 companies submitted simplified issue data covering 21.9 million policy years, and 12 companies submitted preneed data covering 10.0 million policy years. Most of these companies submitted five calendar years' worth of data. Analysis of the mortality data is underway during the spring and summer of

"The effort behind development of these new tables belongs to the SOA & AAA Joint Project Oversight Group, its members and supporting subgroups."

Continued on page 28

Expected Basis	Simplified Issue		Guaranteed Issue		Preneed	
	By Count	By Unit	By Count	By Unit	By Count	By Unit
2008 VBT S&U	245%	250%	340%	305-515%	240%	260%
2008 VBT S&U LU	185%	160%	250%	220-335%	200%	215%
2008 VBT Ultimate	160%	135%	210%	185-250%	170%	175%
2008 VBT Ultimate LU	130%	119%	165%	145-200%	150%	155%

S&U: Select and Ultimate

LU: Limited Underwriting

2012. The working group is striving for a first draft of their report on this work by the end of 2012. Persistency data will also be part of the working group’s analysis. Above are high-level actual-to-expected results from the submitted data, after removing extreme outliers.

In summary, several critical tables are expected to be closer to completion by the end of 2012. With appropriate NAIC

recognition, the 2012 IAR table and the 2014 CSO table will become the statutory valuation minimum standard. The new tables for guaranteed issue, simplified issue and preneed would also ultimately become statutory minimum standard tables, with appropriate NAIC recognition. Use of these tables would seem to require a definitional framework around the type of policy to be considered simplified issue, guaranteed issue and preneed. ●



Karen Rudolph, FSA, MAAA, is a principal and consulting actuary with Milliman Inc. in Omaha, Neb. She can be reached at karen.rudolph@milliman.com.



The Low Interest Environment Team of the Smaller Insurance Company Section

By Jim Thompson and Mark Rowley

As Jerry Enoch points out in the Chairperson’s Corner in this edition of *smalltalk*, the Smaller Insurance Company Section (SmallCo) was formed “to distill information that our members can use.” Rather than defining what a small company is, we have let each actuary decide if they feel like they work for a small company or a consulting firm with small company clients.

Last year, as the third quarter approached, we noticed the Treasury curve was getting lower and remaining low. Since this is the starting point of our asset-adequacy projections, we were wondering how our projections would turn out. We also knew that the usual sources of information—seminars, webinars and public literature—were lacking. This situation affects all companies. Perhaps larger companies were using privately funded studies not available to others. We knew we had to make assumptions to do our projections. If you have low interest to start with, there is little room for the pop-down scenario.

This set of circumstances was an opportunity for SmallCo to make a difference. We decided to focus on this one main issue for 2012, so we formed the Low Interest Rate Environment Team.

SmallCo publishes a section newsletter twice a year. This article will appear in October but was written before the end of May. To supplement this schedule, the council addresses breaking news via blast emails to our members. Several of these blast emails are reprinted in this edition of *smalltalk*.

We disseminated information on a number of important topics, primarily through blast emails but also through presentation at various actuarial club meetings:

- Websites with interest rate information
- Asset adequacy testing and whether extra reserves need

to be established

- Insurance department views on asset adequacy testing
- How to do mean reversion when interest rates are low
- Impact on valuation and nonforfeiture rates
- Impact on product development and pricing
- How the Federal Reserve manages interest rates

In keeping with our use of the best technology available, our team worked with Society of Actuaries’ staff to set up a blog on the SOA website with comments on why we formed and what we are doing. See

<http://blog.soa.org/2012/03/12/the-low-interest-rate-environment-a-roundtable-discussion-with-members-of-the-soas-smaller-insurance-company-section-part-1/>.

<http://blog.soa.org/2012/03/13/the-low-interest-rate-environment-a-roundtable-discussion-with-members-of-the-soas-smaller-insurance-company-section-part-2/>

In addition to the blog, remember that our section newsletters are on the SOA website at <http://www.soa.org/news-and-publications/newsletters/smaller-insurance-company/smaller-detail.aspx>.

Other projects planned or delivered include: presentations to the Michigan Actuarial Society and the Fraternal Actuaries. Other opportunities to speak will be sought out. Additionally, SOA meeting sessions sponsored by the Smaller Insurance Company Section support the needs of actuaries in this low interest rate environment:

- “Hot Topics for the Smaller Insurance Company,” at the Life & Annuity Symposium, held in May 2012 in Los Angeles;
- “The Challenge of Low Interest Rates,” also at the Life & Annuity Symposium;

Continued on page 30

- “Complying with ASOPs for Cash Flow Testing in a Small Company,” an Aug. 28, 2012 webcast;
 - Smaller Company Issues Buzz Group at the Valuation Actuary Symposium, Sept. 10-11, 2012 in Los Angeles;
 - “How Can Smaller Companies Respond to the Low Interest Rate Environment?” ValAct session;
 - “Low Interest Rates: Financial and Product Implications” session at the SOA Annual Meeting, Oct. 14-17, 2012 in National Harbor, Md.; and
 - “Financial Reporting Issues and Considerations for Year-End 2012,” a Dec. 11 webcast.
- We encourage public discussion of the situation and feedback, and welcome others to join! ●



James R. Thompson, FSA, MAAA, is actuary and consultant with Central Actuarial Associates in Crystal Lake, Ill. He can be reached at jimthompson@ameritech.net.



Mark C. Rowley, FSA, MAAA, is vice president, managing actuary with EMC National Life in Des Moines, Iowa. He can be reached at mrowley@emcnl.com.

SOCIETY OF ACTUARIES

Smaller Insurance
Company Section

475 N. Martingale Road, Suite 600
Schaumburg, Illinois 60173
p: 847.706.3500 f: 847.706.3599
w: www.soa.org

smalltalk