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Management Uses of Cash-Flow Testing

Moderator: Willard C. Rinehimer, Jr.

Panelists: Robert W. Welander
Robert Buckner

Summary: In this session, panelists discuss how they have leveraged cash-flow testing (CFT) results and models to:

- *Influence investment decisions*
- *Analyze risks*
- *Expand CFT models to meet management requirements*
- *Provide relevant information to regulators and rating agencies*

Panelists discuss the enhancements required to meet these needs and provide guidance on communication of results to a nontechnical audience.

MR. WILLARD C. RINEHIMER, JR.: I'm with Tillinghast–Towers Perrin, and I'll be the moderator for this session. The panelists are Rob Welander from Amerigo Life and Bob Buckner with ERC Life Reinsurance.

Companies have spent a significant amount of time and expense to develop and maintain cash-flow testing models used for just an annual report to regulators. The existing cash-flow testing models can be leveraged to provide relevant and useful information to a wider audience. The panel will discuss how they expanded use of their cash-flow testing models from a necessary evil into a useful management tool. At the end of the presentation, we will allow time for questions to our panelists.

Our first speaker is Rob Welander. Rob is in the modeling and projection area of Americo Life. He has many years of practical experience with projection models and cash-flow testing. Rob will discuss some other uses for your cash-flow testing model and how to realize these uses.

MR. ROBERT W. WELANDER: We're going to go through what I think are pretty much the top uses for the corporate model once you have it in place. Obviously, given the title of our session, the first one is cash-flow testing. Once you have one model in place, everything else just falls into place. You've done all the hard work. You got all the hard work done so it goes beyond that.

Another thing you can use the model for is economic value analysis. Other uses include asset/liability matching, corporate planning and strategy (which kind of fits the category of "what-if") testing, pricing considerations and product development, GAAP work, dividend determination and capital management. A subset of cash-flow testing is the whole risk-based capital (RBC) C-3 risk that everyone has been talking about, and the uniform valuation system (UVS) that is coming down the pike. That, in my opinion, ends up just being a subset of your cash-flow testing model. It's not a variation of it. It's just a piece of it, but that's something that's relevant.

I think before we get into those eight uses, I want to give you an idea of who I am and what I do and where I come from so that you can understand my biases. You can understand the types of models I use, and some of the pitfalls I personally face when I'm doing this so you can relate some of these activities to what you do. I work for Americo Life. It's a privately owned holding company in Kansas City.

It has six downstream companies. I am at the corporate office where all the actuarial work is done. There is little, if any, actuarial work in any of the six companies. We have in excess of 850,000 policies, and we have about \$3.5 billion in assets. We model universal life (UL), traditional insurance, and annuities, and that includes both general account and equity-indexed business.

We make use of some financial reinsurance, and our financial reinsurers like to see our models to make their job easier. Of course, we provide it to them because, invariably, as everyone knows, when you start doing nice things for your reinsurers, they start getting you luxury box seats at the Royals' games, so it works pretty well.

In terms of the structure of our model, liabilities are broken down into pieces. We start by breaking apart liabilities by company. Once we've done that, we break them out by pre- and post-acquisitions. The vast majority of the 850,000 plus policies we have come from other places, and when you get those policies, you get those models, which is an issue we'll talk about later.

We break it down pre- and post-acquisition, mostly for the GAAP work that we do with the model. There's no real statutory value to knowing it before versus after acquisition. We break it out by line of business. In this case, line of business implies UL, interest-sensitive and traditional business, and annuities. We'll look at it by product type. In this case, product type means term versus permanent and base policies versus riders. Within that specific product name within universal life, we'll look at universal life's product one versus product two versus product three. Individual products fit that category. Then, there is in-force versus new business. We break those pieces out for obvious reasons.

Cash-flow testing. You don't get to look at new business. For a lot of the other uses, we want to incorporate new business. We might use the exact same models with some modification for expenses in that type of business.

Let's talk for a minute about what actually gets into the model. We basically start with Exhibit A, Part A and throw everything into it except the substandard and the group business. Those are things we don't model explicitly. Exhibit A, Part B goes in there as does Exhibit A, Part G, the cash value, and excess of reserve. Typically, we try and pick these based on their gravy factor. If it's just gravy in your model, it's nothing but good news. We'll do our best to get it in, if it's relevant.

The other side of this is what doesn't get modeled. In this case, the obvious one for us is all the supplemental benefits. We, to be honest, haven't found a reasonable way to get waiver and accidental death and all of those pieces into our model to make them relevant and consistent with a lot of what we do. We have a smidgen of health insurance that is inconsequential, so it does not get into our model.

Let me talk a little about how we model our liabilities because this dictates how easy it is for us to apply those liabilities to the different uses. We start with an extract out of our valuation system. One of the driving principles is we do not want to reinvent the wheel. There's no need for it. We have a legitimate extract off of our valuation system. We can use that information. It has 90% of what we need to create a legitimate in-force block, and then we just beg and plead with them to throw the other 10% into some user-defined field and eventually it works. We have legitimate information that we can use to build our in-force business.

Like most places, we've custom built a model builder. We're of the assumption that you take a policy and you put it in a bucket. You don't split that policy out into four or five, or ten or twenty different buckets where you have 8% of a policy in one and 2.5% in another one. You get the same kind of mix and the same kind of distribution. We just put a policy in a bucket and move on. We don't worry about splitting it.

Validation is one of those issues about which everyone wonders how good you really need to be. Part of the reason we concentrate on validation so much is, like everyone else in the world, we have to deal with accountants, and accountants want things to line up. The other issue we have is, as soon as we produce numbers, the accountants start looking at them. Who can tell me what the first thing accountants do when they look at numbers? They compare them to last year's numbers. You might as well go ahead and compare the numbers to last year's numbers. Establish what the differences are, so you can explain it to the accountants so they don't come back a week later and say, "Why are these different?" You already know the answer.

In terms of tolerances, we kind of set some internal standards. The majority of what I'm going to end up talking about today is the Ivory Tower view. I pretty much live in an Ivory Tower. I

don't have to deal with actually doing a lot of the end work. I produce a lot of the numbers, but I'm not the one that has to sign it, so I get to live in an Ivory Tower. We aim for getting results that are, in terms of initial validation, within about 2% of where we want them to be. If we can validate a given product or line within 2.5%, with no individual piece, and it is not more than 10% out of whack, we're really pleased. That's pretty much where our ultimate threshold is. If we recognize that it's an inconsequential block, or we know that it's stable, but there's just something weird going on in reserves, we'll allow that to spread a little wider. That's typically what we shoot for.

Once you have your liabilities in place, we must incorporate the assets. The problem is, when you have \$3.5 billion assets, you must figure out how to get them into the model as legitimate information. I think most companies face two choices. You model them individually or you get your investment people to use a software package. I'm not plugging anything. We use Bond Edge, and Bond Edge provides us with an asset extract that fits into our system really well. It's a question of whether you want the inflexibility of having one fixed asset stream that the asset guys will say is going to happen. Or, do you want the flexibility of being able to model assets individually and then do whatever you want to them?

Some of the concerns that the great asset debate produces are orders of asset sales. You have your obvious available-for-sale, held-to-maturity issue. If you're just using an extract out of their system, you're stuck with their choices. You don't have the ability to change it on a whim or perform sensitivity tests. You're stuck with it unless they run another set of asset runs for you, which usually doesn't happen. In our case, it became a choice of whether we use 30 files or 1,300 individual entries. We ended up using the 30-file route because we understood what our limitations were. This gives you an idea of the magnitude of what we were faced with.

The upside of using 30 files instead of 1,300 entries is you have much faster calculations. Speed is an issue. As your models get larger, and as they become more involved, speed becomes much more of an issue, and this falls into play. The obvious other way of looking at it is if you use 30 files, someone else does the work. It's not you, it's not your student, it's not who reports to you,

and it's not your boss. It's those investment guys and they have nothing better to do anyway. Make them do the work.

So let's start comparing. I gave a list of eight earlier. Let's try to isolate some of the specifics about each of those possibilities for your cash-flow testing model and look at what some of the differences are. I'll start with cash-flow testing as a base, and we'll just move from there. An example of cash-flow testing, unfortunately, is cash-flow testing. The UVS might come into play. The RBC C-3 risk might come into play, but, for the sake of the discussion, let's stick with cash-flow testing. Who needs it? In this case, the appointed actuary needs it. He's putting his name on the line, and he wants to know that he has good information and he can get comfortable with it.

There is a level of detail that they want to see. They just want to get comfortable that their assets are making good and sufficient provisions for their liabilities. I think that's not a direct quote, but it's pretty close. They don't need to see information down to the product level. They need to see it by company. They don't need to see it by line of business. They just want to make sure that, on a company-by-company basis, the numbers are legitimate.

This happens in January and February. We use a September 30 cut-off for a lot of our year-end information for the models, but we have other issues going on so we typically don't get the cash-flow testing until January and February. How many scenarios are needed? In this case, we need the New York Seven plus a few others.

Why do we do this? The only reason anyone does cash-flow testing by itself is because of the regulatory compliance issue. Most people don't do it for fun and sport. There are some specifics about the cash-flow testing model itself. You don't have the granularity. You don't have the little tiny pieces that you're looking at. All your earnings stay within the model to be used later on to help support the assets as you go forward.

Economic value analysis is an annual event. We try to establish what the current economic value of our business is. Who wants this? Our director of planning. If you knew our director of

planning, you'd know why he wants it annually. If he could get away with it, he'd take it quarterly. What level of detail is needed? We need as much detail as possible. Again, if you knew him, you'd understand why he wants it to be seriatim. Well, that just doesn't work. This is what goes on in October and November prior to cash-flow testing. They really spend a lot of time concentrating on this by looking at actual-to-plan figures. That's what goes on in October and November.

This is a one-best-guess scenario. We tend not to run a lot of sensitivities off of this. Not only are they trying to get an idea of what the current value is under their best-estimate scenario, but they also want to know what the numbers are going to look like over the next four quarters (in this case, the next five quarters), to get an idea of how they need to plan, and how some of the numbers are going to fall out. Why? The owners want to know. We're privately owned, and that's their driving force. They want to know what the economic value of their asset is and, in this case, the six companies make up their asset. They want to know what that value is.

Some specifics of the model. In this case, they want more granularity. Because it's going into some plan type assumption, they want to see it broken down into smaller and smaller pieces. In this case, the distributable earnings are distributed because they assume that those numbers go to support new business, new marketing strategies, new product lines, or whatever the case might be. Those earnings do not stay within the product itself going forward.

Asset/liability matching might be the one most obvious offshoot of cash-flow testing. I'll give you a rather bizarre example here that might not be as obvious as it seems. We had a very conditional specific asset for which we had some options on it. We weren't sure what we wanted to do with it. We looked at the liabilities against that specific asset and ran some scenarios to see what our best options really were. We weren't necessarily trying to match up assets and liabilities, which is more typical of this process. We were trying to understand what we wanted to do with a specific asset and what our best course of action was.

In this case, the chief investment officer was the one pounding on the door wondering what we should be doing. He didn't care what level of detail we gave him. He wanted to know the

number and what looked best. Detail didn't matter to him. It was an end result issue. This is one of those timely issues. There's a fire, and we have to put it out. Whenever it shows up, you do your best to get it out in a reasonable amount of time. In this case, how many scenarios are there? You start with one and then you start building scenarios around it. You move your yield curve up ten basis points; you move it up and down 50 basis points and 100 basis points, and you start seeing if you are getting unreasonable numbers coming out of those scenarios. You try to understand what the effects are the farther out you get from where you are today.

The reason he really wanted this was because it added value from his area. He could have just taken the asset and went out and bought ten-year corporate bonds, but that might not have been the best alternative. By going through this process and running a few different reinvestment strategies or no investment strategy, you just leave it where it is. He got an idea of what the best course of action for him was, and it gave him some comfort in his decision-making process.

This typically gets done on a much smaller basis. You do it on a company-by-company basis if you have those types of assets within a company. Earnings do not stay because they're not really all that relevant to what he's trying to establish. You just move them out as time goes on.

Corporate planning and strategy is one of those processes where once your chief financial officer (CFO) recognizes that you have this ability, you become his new best friend. Suddenly, there are a lot of questions that can be answered beyond all the directors sitting around in a conference room wondering what the answer might be. You can actually show him what the model says. We all know that the model is correct; actual is junk. An example might be unmet profitability objectives. The directors have certain preset assumptions about what they think a block or a product or a company is going to do, and when that doesn't happen, they want to know why. The CFO is always driving that.

This is one of those as-much-detail-as-possible type of projects. They really want to understand exactly what is going on and causing the discrepancy between what they thought was going to happen and what really did happen. This is typically a one-best-estimate scenario, but then you run a few sensitivities off of it to see if you have other issues that might be lurking. You're

wondering what the best crediting strategy might be, or is it what's driving your profitability problem? Are you trying to keep up with the market where it was originally priced to have an expanding spread? Eventually, you just earn a 3% spread forever, or because of marketing considerations, you're able to sit at only 180% basis points. Whatever the case is, this is a good way of establishing whether that's what's driving it or not. Again, this is a very detailed type of process, and it's going to be scrutinized because you're coming up with some rather large decisions out of this model. They're going to spend a lot of time looking at it.

Pricing considerations and product development. You don't think of pricing actuaries as being the people working with large models. They typically look at one product at a time and just play with assumptions. But if you look at it on a bigger scale, you might want to consider what the effect of changing your commission will be across the board. If you have three distribution systems and you want to see what the company-wide effect is over the next five years of changing that commission structure, the model is the perfect place to do it. You don't have to sit down, throw together a bunch of spreadsheets, and try to estimate it given a certain sales process. You already have something in place that can do that for you. You just start playing with assumptions to produce your output. The senior vice president of marketing is usually the guy driving this because he's the one that's usually trying to get as much commission as possible out the door. The linear assumption is logical. The more commission you pay, the more agents are going to sell that product, and it tends to make sense.

The level of detail you're looking for here is whatever the pricing people understand. It doesn't matter what's right. It doesn't matter what's wrong. It's whatever they understand; it's whatever they're used to. We all tend to look at numbers differently. My background is all on the financial side. I haven't spent any time on the pricing side, so I have a particular view of the world. I understand that the pricing actuaries have a totally different view of the world. They look at information differently than I do. You have to understand what their view of the world is and be able to present information at that level of detail and in that format so that they can understand the ramifications of their choices.

This is another one of those ongoing processes. It happens whenever the vice president of marketing gets the call from the one agent who sells 20% of your business and is just begging for more money because he knows he can sell 30% percent of your business if he had a better commission structure. It happens and you have to be prepared for it. Again, this is one of those one-run-plus-sensitivity things. He wants to know what this does in the current environment. We need to know how it hurts us in a down environment, so you tend to run a few sensitivities off of it.

Let's discuss one of the reasons for doing this. The pricing guys have their own little world. They have an idea of what the number should be. We can calculate what the number really is by using a legitimate model. So peer review comes into play. It's a polite way of correcting the problem before it starts instead of after it happened. Something specific about this model is that it's basically going to be the same as the pricing model, whatever your assumptions are. We know that pricing expenses are nowhere close to actual expenses; however, we need to use their assumptions for the time being to make sure that we have legitimate parallel detail that's comparable.

GAAP work is one of those areas where it is intuitively obvious why you would use your model to do this. I think most companies have GAAP models or GAAP systems that are separate from their cash-flow testing system. In this case, you might use it to do some *FAS 97* analysis. You might have a more flexible model than your GAAP system. It might be quicker or easier to use. Your corporate model has the ability to give you an idea of what the GAAP effect of some changes might be.

The director of GAAP is usually driving this process. All he wants is good final numbers. He doesn't care how you get there. He doesn't care about the process. He doesn't care about the detail. He wants to know what the end result is. This typically is going into an unlocking type of process. For us, that's October and November. He's concerned that when he finally does unlocking, is he going to get hit by something he didn't expect. You can use your corporate model to run some of those scenarios for him and give him an idea of what the ultimate change is

going to be. GAAP is a one best-guess calculation process. The model should be a one best-guess process to keep that consistent.

You're doing this basically to validate the system either before or after. You have a second number to prove out whether your GAAP system really is doing what you want it to. Whether we'd like to believe it or not, the people setting up the GAAP system aren't super human. It would be nice if they were, but we know they're not and mistakes get made. Using this as a backup to prove whether or not your numbers are truly legitimate is a nice way of keeping everyone happy. You can avoid having something flow through your GAAP statements at year-end that you'll have to go back and try to explain in March and April when it doesn't really come true. This is another case where you need to make sure that your data are at the same level of detail as another system and, in this case, it's the GAAP system. Whatever the level of detail by which they break their information down, you need to be at the same point because you want to have comparability. This is, for me, purely theoretical. We do not have any dividend structures that we ever change.

The Board of Directors, presumably, is always trying to make sure that it has a dividend structure that's competitive, reasonable, and profitable. One of the ways you can establish rather quickly whether the dividends that they're proposing meet the expectations that they have and don't drive you to ruin is to just plug it in and run it and see what happens. Instead of using a theoretical backward-looking approach showing what our mortality was, what expenses were, and how it all works out, plug it in and see what happens.

You pretty much want to mimic, however, how your dividends are structured. If you have one dividend structure for your entire corporation, you want to look at one entire model. You're going to lump it all together and run it all as one big model. If you have different dividend structures for every product you own, you want to break your model down as fine as you can and run it that way to see what the effect is. This, presumably, is an annual process. I honestly can't tell you how often dividend schedules change. I'm guessing it's an annual process. It might be

an every-other-year process, depending upon how much your business is truly participating. This is a one best-guess scenario, but you also want to look at a floor. You want to make sure that in a down scenario, where a bunch of things go wrong, you're not killed. You really want to protect yourself.

The real reason for doing this type of process in the model is to make sure that, in aggregate, your dividends are at about the appropriate level. You might have some minor problems within products, but, in aggregate, your numbers are reasonable, and you're providing your policy-holders with an appropriate return based on how the company is doing. As soon as you get your Board of Directors involved, it's going to be scrutinized. It might not be scrutinized by them, but by someone who the Board of Directors asks to scrutinize that information. You need to make sure you have impeccable documentation for this type of process because it involves a lot more than just running a model and kicking out results.

Capital management is another issue where the model can be used. It becomes rather valuable. You might have discovered over the past three years that marketing says your sales are going to be 30% in one area, 20% in another, and 50% in yet another. It might actually be 60%, 20% and 20%. The real question is, if that mix continues over the next five years, what does that do to capital? What you thought was 30% or 20% is now 50%, and it might be extremely capital intensive. What you thought was 50%, and is now 20%, might not have much of a capital intensive nature at all.

Now that that mix has switched, what does that really do to you? The CFO, ultimately, is responsible for the financial viability of the company, so he's going to be the one driving this. The key to this model is having an accurate new business forecast rather than what marketing says. What really matters is what has been happening recently and what you expect to keep going on. This is another one of those on demand sort of things because it really boils down to when the CFO recognizes what marketing says, and what marketing does are two different things.

The number of scenarios varies. You might need only one best estimate. It comes back and says, “No. You’re fine.” You might have issues and you want to look at what happens under different scenarios to see if it gets any worse, or if it gets any better. The real reason you’re doing this is to figure out how much strain you’re capable of taking and, if you stay on the same course, what does it do to you financially. One of the specifics of this model that’s different from some of the others is that, arguably, you’re really concerned about the next five years or so. You’re not overly concerned about what the numbers look like in the 25th year of the projection because they don’t matter. You’re really concerned about the short-term financial risk that you’re facing because of that mix.

We’ve been through the eight. How do we keep our sanity? We have different requirements for all eight of these processes, of which we do probably six. We have different people beating on the exact same door wanting different information, different levels of detail, and different time frames. In terms of the level of in-force detail, we’ve basically made some concessions and said, “We will produce in-force detail at two levels.”

One of them is relatively detailed. We model it by age, by sex, by underwriting class, and by death benefit option. We also break it out by fund level. We model it by issue year, and we create four issue quarters. That type of business is what gets used when people want to see intermediate detail. If they want to know numbers quarter by quarter, we need to have our in-force at that level of detail. For everything else, we use the same type of breakdown, but we’ll only show one issue quarter per month. We’ll issue everything in July, and we’ll have one premium mode, that is typically collected monthly, although sometimes it’s collected annually. The problem with that type of assumption is that you get premium spikes once a year if you have annual business. If you’re looking at information quarterly, it doesn’t do you a whole lot of good because, in the first and second quarter, all you’re seeing is negative premiums from policies disappearing. Then, in the third quarter, you get a huge spike, and it’s not very predictive. If all you’re concerned about is annual information or end-of-the model information, that type of compressed-down, in-force business works well.

We start getting into questions when this type of modeling becomes more art than science. You pretty much just need a black cape, a hat, and a wand, and you start pulling numbers out. You have to use your best judgment to figure out whether a product needs to be modeled individually or lumped in with something else. Sometimes it's obvious, sometimes it isn't, and it really depends on the process you're going through.

Customization is one of those issues where you want to spend the time to make sure that your modeling software does exactly what you want it to. You might have some funky retroactive interest bonus that's guaranteed for five years, but not the other five. It affects your valuation system this way, and it has a whole bunch of other problems. Depending on the process you're going through, unfortunately, professional judgment comes into play. You have to figure out whether it's worth your time, your effort and your money to put those changes into your system. It might not be worth it, if all you're looking for is the end result and you know the end result will eventually reflect all of those bells and whistles. If you're looking at the short term and you need that information accounted for, then maybe it is worth it.

I tend to look at managing the business rather generically. I live in a black and white world. Like I said, I'm in an Ivory Tower. We're not a stock company and we're not a mutual. I'm of the assumption that most stock companies manage everything by GAAP earnings. Most mutuals manage everything by statutory earnings. As a privately owned company, we manage practically everything by economic value. So from our point of view, economic value is more important than statutory or GAAP earnings, although GAAP is a close second for us. Typically, you need to establish what's most important to your management and look at how it gets managed.

These next two issues, I think, are pretty interesting. You might be asked to run a model with assumptions that are just flat out stupid, and you don't have a choice. The reality of it is, when it comes right down to it, we are not responsible for the predictability of assumptions that we're told to use. That's not the issue. What we're responsible for is the integrity of the results given the assumptions that we were told to use, and there's kind of a fine line here. There are a lot of assumptions that we have to produce on our own. There is mortality, expenses, termination rates, and premium continuation. We have responsibility for many of those, but marketing might

come in and say, “The expense per policy isn’t 40; it’s 15.” We all recognize that that just isn’t the case, but they want to see it. We’re not responsible for the predictability of a \$15 per policy maintenance expense. We’re responsible for the integrity of the numbers given the \$15 per policy maintenance expense.

Having been through all of that, who are the people in my neighborhood? Let’s start with the ones we all like, and those would be the actuaries. Given all of these processes, you need to work with the appointed actuary. You’ll work with the statutory and tax people. You’ll work with the GAAP people, and you’ll work with pricing and product development people. As time goes on, you want to keep your model as robust as possible, and the way to do that is to convince your pricing people that the model they produce for pricing needs to be structured in such a way that you can drop it into your program as they go from new business to in-force business. That way, you have the ability to project it.

We all have our crosses to bear and people we must deal with. Typically, the people are the CFO (but maybe not directly) or the director of planning. In our case, we have a director of planning. You can insert whatever title your company uses, but you have to deal with that person. All the work really gets done by the accounting clerk. Those are the people who you have to deal with more often than not.

The investment people at least kind of understand what you’re talking about. That’s always a plus. I deal with the chief investment officer. I deal with the accountant sometimes, but you often deal with the analyst. Analysts are the ones that are providing you with information. They’re the ones providing you with your assets. They’re the people you have to get comfortable knowing and talking to.

If you’ve ever run a model over the weekend, and the network went down for five minutes on Saturday night because it had maintenance to do, and you were not told in advance. You found out why it’s important to know some of the computer people. When the one gigahertz machines come out, you found out that just a nice smile and a hello will get you an extra 256 meg of ram.

We make use of financial reinsurance. You get to know your reinsurers pretty well because they have their own due diligence issues when you send them your model. They're going to call you back and say, "Why did you have a 1.9 multiplier in your cost of insurance (COI) table?" Hopefully, you will have a good answer, but you ultimately end up having to deal with your reinsurers.

Let me talk about some rules. I don't want to be the person who gets burnt by not following this rule. If your model consists of 1,000 or so different products, then there's probably some value in wasting some network space by dumping your model out every once in a while. Or let them backup three gig of information every night just so you have it. Storage space is cheap. Make use of it.

As the model gets bigger, structure has value. It becomes easier to find information. It becomes easier to tell other people where to find information. It becomes easier to produce information. You get consistency, and that makes it a lot easier to move from one model to the next and remember what you're actually doing.

Experience has shown me the value of multiple PCs. One machine that's a workhorse is great until you have a model that runs for three days and you're asked for something to be done before it is done working. You're basically clueless for the next three days. If you have two machines, you can just start cranking things out. You still have e-mail to play with on your other machine. There's value in having that second machine. Be ready to justify it, but don't be afraid to ask for it.

Documentation of process. I really haven't heard too many people harping on it at these sessions, but the reality of it is documentation saves you more time than it costs you. How many times have your auditors asked you why a change was made? I can't even count it. If you have it documented, you just pull out a sheaf of letters, you give it to them, and they come back two days

later because it took them that long to go through them all. They're happy because they know every single thing that happened. It ends up in their documentation. They've covered their behinds. You've covered yours because you know why everything has changed. Document everything.

Documentation of changes. This falls into the same category. Your accountants will like you if you document the processes. Every time you question a process, you wonder why it's being done. When you find out the answer to your satisfaction, write it down. I'm kind of flip-flopping here. Six months from now, someone else is going to ask the same question. Why is this process being done in this manner? Why is this file stored over here and not over here? If you've already figured out the answer, don't reinvent the wheel.

Because I've used these models for these processes, there are a few little tidbits I've learned. I've already hit on the first one. Build on other people's accomplishments. Don't reinvent the wheel. I keep coming back to that because it's so true. You can't blindly take other people's information as Gospel just because they say so, but build on what they've learned, prove that it's still true, and move on.

There are certain files that get used in more than one place. If you update them for one process, recognize that they were updated for every process that uses them. It is one of those things you don't really think about until it comes back to haunt you.

Don't count on management believing you. This has been true since time began. It doesn't matter how hard you've worked to prove out a number to yourself if your boss or management isn't going to believe you. You've got to prove it to them, also. Be prepared for it because it will come.

Become friends with everyone, and talk with them. This applies mostly to the computer people. They know everything about what's going to happen to the network over the weekend while you're gone, assuming that your model is running. You might come in Monday morning and assume everything's great when, in reality, it's not. Talk to your statutory people. They're the

ones that know when business is getting moved, such as when co-insurance treaties are being applied that take 100,000 policies out of your system (and you might think they're still there). The more you just randomly talk to people, the more you tend to learn little things here and there that end up being extremely valuable.

Know your client. Now I sound like a business speaker. The reality of this is you have six to eight processes that you're going to end up using this model for, all with different requirements. When someone asks for something, understand what they're asking for because you can provide a better product. They might mean asking for something in a manner that ends up being foolish. If you know what they're looking for, you can help them, guide them, and direct them in the direction that they need to be going.

MR. RINEHIMER: Thanks, Rob. Our next speaker is Bob Buckner. Bob is a vice president and appointed actuary to the life companies of ERC Life Reinsurance. Bob is responsible for monitoring and maintaining profitability of all in-force business. Bob will discuss how ERC made incremental improvements to their cash-flow testing models to get to their current projection model. He will also discuss how management utilizes the results of this model.

MR. ROBERT BUCKNER: I'd like to start off with an observation. First, if I knew that getting business from Americo just took seats to the Royals' games rather than the Chiefs' games, I'd be doing more business with them. Rob Welander is in my backyard, so he talks about who his neighbors are, of which I am one.

Before we get going too far here, I'd like to ask a couple of questions of the audience, and that is, who in the audience currently does the cash-flow testing at your company? A good number of you. How many of you do the cash-flow testing for regulatory purposes and that's it? That's where we were two years ago. We did the New York Seven. We tossed in a couple of extra scenarios. We tossed in some sensitivity tests, and that was it. We considered it a royal pain and a royal waste of time. We were right because that's all we used it for.

But about a year-and-a-half ago, we had some changes at our corporation in the form of a new CEO and a CFO. We're owned by General Electric, ultimately, and our CEO knew more about light bulbs than he did about insurance. I'm not saying that figuratively. It was true. He was head of the lighting of G.E., and he really didn't understand the business. We had a very steep learning curve to overcome. We wanted to get him up that curve just as quickly as we could. Two months ago, we received a new CEO. He knows more about power systems and about real estate than he knows about insurance. This is part of the G.E. culture.

I was made appointed actuary about a year ago, and my immediate supervisor, the president of the life companies, wanted to increase the exposure of the life companies within our property and casualty (P&C) organization. We had a meeting with our CEO and CFO at the time. They seemed to be wondering what an appointed actuary was and what the cash-flow testing was all about.

Fortunately, I was prepared. I got their attention very rapidly. I said, "I'm the appointed actuary. That means that I keep you out of regulatory trouble. But, you know, right now, I don't feel very good about what I do because I feel like I'm a drag. I'm overhead. I don't contribute anything tangible to the bottom line of this corporation." If you know anything about the G.E. culture, you know that's important, as is GAAP earnings and consistent, nonvolatile growth. I said, "Do you know what I really want to do in this new role?" It's, of course, new for them because I'm defining it as I go along. "I want to turn my area," (which at this point does cash-flow testing and statutory and GAAP stuff), "into a profit center."

I have never seen the CFO's ears perk up that much that quickly. He said, "What? Profit center? You're overhead. You're an expense. You're a nuisance." I said, "Now, let me tell you what we're going to do. We're going to go beyond cash-flow testing of the New York Seven to say that we have a thumbs up or a thumbs down, or we need to set up some additional statutory reserves. We're going to go way beyond that, and we're going to actually improve the profitability of our company." He asked, "How on earth are you going to do that?"

I said, “Well, we’ve got some interest-sensitive portfolios here. Right now, we just do the cash-flow testing and say that we’re sufficient. However, without a whole lot of additional work, we can convert that from cash-flow testing to asset/liability management.” That is exactly what Rob was talking about. Take incremental steps, get management’s buy-in, and see how far you can go. We said, “All right. Here’s our current set of things. Instead of using the assets that we currently have, let’s figure out what the efficient frontier actually is.”

Let’s do risk and return for the sake of argument. We said, “We’re going to throw out the assets that we currently have. We know that they’re sufficient to mature the liabilities, but we don’t know if they are efficient to mature those liabilities.” I said, “Let’s take a whole range of investment strategies.” One of them was very simple. It was 100% cash, which is not the best answer, but you have to start somewhere. We then broke it down into a series of percentages.

We said, “Okay. We’re going to assume everything is single A, noncallable corporate bonds. You have to start somewhere. We’re going to break it up into chunks. You’re going to have some two-year, five-year, ten-year, 15-year, 20-year, and 30-year cash. We broke into specific percentages of various classes. For example, we used 20% of two-year paper and 60% of 30-year paper. We used 40% of this two-year paper, 20% of the five-year paper, and 40% of the 30-year paper. We went through 60, 70, or 80 different strategies, varying the percentages in 20% chunks.

Just for simplicity sake, we used the model that we already had. We used the scenarios that we already had, which were the New York Seven. What does this look like? What do we want to use for measures of risk and rewards? What if we just use reward as the average result?” Again, it doesn’t give you a terribly sophisticated result, but you have to start somewhere. Risk is a standard deviation of the results. You can argue that with seven scenarios you’re not getting a particularly valid standard deviation, but again, it is just for illustration purposes. We started plotting these results out, and we came up with many that kind of bunched together. It didn’t make a whole lot of difference, and you saw some that were clear outliers.

When we finished with all of this, we were not sure it was the efficient frontier, but we would draw something like that. They said, “Where are we now? We know what these particular investment strategies are, but where are we now?” We weren’t on the curve. Do you think there’s room for improvement there? You bet. The question that we then were able to pose to management was, do you want to take the same amount of risk and push for greater rewards? Or do you want to maintain the same level of reward?

The question was, where do we want to go? Do we want to have the same level of risk or a greater reward? Do we want to reduce the level of risk? Or, if you really want extra earnings, do you want to zip it out and say, “Okay? We’ll take additional risk, but we’re expecting to get that much additional reward as a result of it.” At least management was able to make an informed decision rather than just say, “We think eight-year corporates are a good thing for this.” This was something on which you could work with the investment area. If they work with you, it makes them look good. It means they’re starting to add value. It makes us look good. We’re starting to add value. At the end of all of this, you say, “You know, we’ve added bucks to the bottom line.” It is not something they’re used to hearing from a valuation actuary.

We have a situation that might or might not be comparable to your company. We have a number of portfolios that we basically share. We don’t have all of the liabilities on our books. We share some interest-sensitive business with our clients. As a result, we have these portfolios where we can optimize those in isolation. We will call this A, B and C. We’ll say, “Okay. What is the ideal investment strategy, liability strategy, crediting strategy, reinvestment, disinvestment, and the whole bit? How can we optimize what’s going on with A?”

Once we get through that, we have two selling jobs to do. One is internal, which is to convince all of management, the investment area, the actuaries and so forth that this works. The other is, we have to turn right away and convince our clients that it’s a good thing to do, too, because we don’t control the crediting strategy. We might or might not control the assets. We’ve optimized this. We leave that in isolation. The same thing exists with Company B and with Company C. This is where we are right now. We’re optimizing these things.

We need to say, “Now that we’ve optimized those three, we have everything else that’s sitting in our general account, including noninterest-sensitive liabilities and all of the other things. How do we optimize our entire company given that we have these three that are already set? We can’t play with those anymore. We have those exactly where we want them. How do we optimize everything else? It is not everything else excluding those three, but given those three, it is everything in total.” It’s not a simple problem and, frankly, we’ve got a lot of work to go on that. But it’s an area that I find particularly exciting and rewarding because we are able to show that we are adding value.

We were talking about ways that we use things, and I’d like to emphasize some of the rules Rob discussed. They’re not commandments, but they might as well be. They definitely back up what you’re doing. We get some of these models from our clients and we create some of them ourselves. We provide peer review for our clients as a result because we are using them. We use them in our planning process. Up until last year, our accounting area did the planning, and they’re real good at planning. They look at what happened last year and in the two previous years. They draw that straight line and say, “That’s what’s going to happen next year.” They extend the line a little farther and say, “That’s what happens the year after, too.”

We thought this was a ludicrous process, frankly. Who knows the business better at your company than the actuaries that are projecting the business, or the accountants that are putting in the quarterly results? They know what’s going to happen two, three, or five years from now. It’s a rhetorical question, of course, but I think we’ll all agree that the actuaries, particularly in your corporate planning area or your valuation area, generally have a much better view of what’s going to be going on, at least with the business that’s currently on the books.

As a corporate move, we pulled all of that planning away from the accountants. We said, you know, “We don’t like what you’re doing, and we don’t like the results that we’re getting. We can’t validate what’s going on. Instead, tie it in to the cash-flow projections that you’re currently

producing anyway.” So, as Rob pointed out, use it for GAAP or some *FAS 97* results. You can use that as a way of, say, feeding a spreadsheet somewhere. We’ve gone through it to use it for both an operational plan, which is basically a six-quarter plan, and a long-range forecast, which is a four-year plan. That is long range for G.E., incidentally, but it might or might not be long range for an insurance entity.

We look at that and we plan things out. When using these models, we then layer on the existing business and from there add projections as to new business. That’s a much cleaner way of showing what’s going to happen and answering questions, than what our accountants were doing, which was, namely, saying, “We’ve had this kind of growth and this kind of bottom line.” They couldn’t tell you what profitability was being anticipated on the new business. They couldn’t split out first year and renewal premiums. It was a very crude process.

We can show very explicitly what we have for existing business, what we have for new business, and what kind of growth we have. Come down to the bottom line because we’re looking at this, again, on primarily a GAAP basis. If we go down to the bottom line, we know how much we have to stretch. G.E. or the CEO or the CFO have made a commitment to making X amount of profit. From there, we can say, “Given our best view of what’s going to happen, this is where we’re going to be on the existing stuff. This is the amount of new business that we think is a reasonable projection. If we’re still X million dollars short, then we know what our target is.”

They say, “How are we going to make that up? Is it an acquisition? Is it being more aggressive? Do you make it up in a volume kind of thing? Is it a way of squeezing a little extra out of the investment side? Does it make sense at this point to revisit the optimization and say, ‘We want to push out a little farther on the risk area so that we pick up additional return.’” We can address these issues because we have the models in place where we can do that.

Additionally, in the planning, we look at things on a longer term than just the four-year or five-year horizon that our masters look at. Because of XXX, we’re looking at what our capital commitments are. For a reinsurer, capital is very important and we do not look at only where our

capital is today, and where it's going to be next year. Because of those humpback reserves and XXX, we want to make sure that we have either enough capital to support that or that we can get some financial reinsurance ourselves and do the proverbial "dumping the reserves in the ocean." I don't know of anybody here who does that, but we at least look at it to see if that's the most capital efficient method of dealing with the reserves.

As I said, we use it for asset/liability modeling (ALM) to optimize the business. We use it, frankly, to look at new asset classes. We have a fairly vanilla portfolio that is virtually all investment grade and all publicly traded. Because of the cash-flow testing models that we have in place, we start looking at issues such as liquidity. Rather than saying we need more liquidity, we look at whether there are areas where we actually can afford less liquidity and more illiquidity to pick up a liquidity premium. So there is more interest from private placement.

In addition to illiquidity, does it make sense to push into lower investment grades? Using the models for testing risk-based capital, we can see whether the extra yield is worth the extra capital. We can go through with the models and get an idea as to what the impact is going to be on our RBC and on our returns. There is risk/reward and cost of capital. Is this the best move for us?

We have an area in our corporation that's called risk management. You may have a similar department. Ours is probably unique though. We don't have any actuaries in it. It's kind of a G.E. initiative. They look at things and they want to know, how you are doing things? How much risk is there? How much volatility is there to our earnings? So we are able to work with some of the models and talk about things such as standards of deviation for mortality experience and tell them, "Here's the range of earnings within an X% confidence interval." They get real excited about that.

I was talking with one of our sister companies. I asked, "How do you use cash-flow testing?" The reaction there was, "There's only one use for cash-flow testing other than regulatory purposes." That's news to me. We use it for five or six different things here." "No. It's only

one thing. That's to validate an appraisal." Think about companies that are acquiring other companies. You've got an appraisal there on the block of business. You look at the cash-flow testing that has been done on it to determine how sensitive the results are of this block that you're getting.

There are many interesting uses there. I've gone through ones that we have. I would encourage each of you to do a little extra this year. Find some new way of using the models that you have. You don't have to go the entire distance this year. In fact, I would argue that you probably can't. If you can go through and say, "We're going to take just one portfolio and do something extra to it," or, "We're going to take one portfolio and do the 50 scenarios for the RBC and use that to try to optimize things," or, "We're going to try to develop a new standard for what it means to be optimized as a portfolio instead of an average of what you might want to look at, say, the one-sided standard deviation or something," then you can make a real contribution to your company and not just check a regulatory box.

I would agree with Rob about all of this. Talk with your other people. Along those lines, particularly your investment people, I encourage you to take the Chartered Financial Analyst (CFA) exams. I don't care if you get the three initials after your name. That's not the point. The point is your investment people are not going to learn to speak in actuarial terms. If you want to communicate, you have to speak their language. You have to speak the language of your CEO. You have to speak the language of your CFO, which is typically dollars of profit on the bottom line. Don't get caught up in risk theory and standard deviation and confidence intervals and then just watch their eyes glaze.

Instead, work with them to get them information that helps them make better decisions. We turned this area that everybody thinks of as overhead into a profit center. We get measured on that, and our salaries and bonuses and so forth are tied to finding new ways to increase the value of everything we do for the company. I encourage you to take that same mind set or mind frame back to your company. Don't say, "I have to do this." Say, "How does this help my company? How can I drive this to the bottom line?" I think that you will find that there are a lot of people who will be very interested and very willing to help.

MR. RINEHIMER: Bob did a little informal survey as to how many people used their cash-flow testing models for cash-flow testing purposes. Contrary to that, how many people use their cash-flow testing for one other purpose? Very few (approximately 20%). How about two or more purposes? (Approximately 20%.) So it's still just a small percentage. It looks like the majority of the people here are just using cash-flow testing models for cash-flow testing purposes.