

## **REDESIGNING THE BASIC EDUCATION SYSTEM**

Leaders:                    CECIL D. BYKERK  
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*This session is intended to provide you with information on the redesign effort and, particularly, the governing principles that will guide the design process. Equally important, the session also offers an opportunity to provide your input and ideas to the Task Force and the design team.*

MR. CECIL D. BYKERK: I'm currently Vice President of the Board of Governors and my focus is on the Education and Examination (E&E) process. Bob Shapiro, who joins me on the panel, is a consulting actuary and is on the Board of Governors as well. He has served on the Board Task Force on Education, which I chair. I might mention that Bob's focus over the last number of years has been working with the Actuary of the Future Section and some of those efforts. So Bob's approach to this is a little different than some of us who have been more involved with the E&E system.

We have one other member of the Board Task Force with us in the audience, Roy Goldman. Roy has also served on the Board Task Force on Education and is the Immediate Past General Chairperson of the E&E Steering Committee. Another member of our Task Force is Godfrey Perrott, who is a consulting actuary with Milliman & Robertson. He's had a long history of being involved with the E&E process. I've been involved with the E&E system, but it has been a while since I've been a member of the committees. I also was involved with the future education methods (FEM)/flexible education system (FES) effort which some of you will remember. We will talk a little about how those things tie together as we go through our presentation. The last member of the Board Task Force is Robert L. Brown, who is a professor of actuarial science at the University of Waterloo, Canada. Rob is a member of the Board of Governors and has been a large contributor to the Task Force. He gives us several different perspectives: an educational perspective and a Canadian perspective. Marta Holmberg, our staff liaison, has been invaluable as well. I think the five Society members who have been involved in the Board Task Force have brought a lot of different perspectives. They also have been very open and have not necessarily tried to drive their personal issues to the final product.

One thing that struck us as we looked back at what's happened in the last number of years, including many changes to the E&E system, was that there wasn't enough communication. So this session is part of an effort to communicate with all of you. We will talk for a while but, then we want your input.

People will come up after a presentation and say, "OK, tell us what the syllabus is going to look like. We know you know what it is." Well, we don't. We have a placeholder design we use which I'll explain. The design is not intended to be a map that we follow. It's just something so people can begin to get their hands around it and understand what we're all about. We were having a lot of difficulty initially getting people to understand it without something concrete to grab a hold of. So that's what the placeholder design is all about. I'd like to start off by reading a description of the task force: "The Board Task Force on Education was charged to review the basic education system, to define and articulate the

distinctive competencies.” It goes on but I wanted to stop there in order to focus on the initial task to review the basic principles. That’s what we’ve been doing. We’ve been at it for about a year. We’ve spent a lot of time on the phone. Now, what were we asked to review? The Society E&E system. But the Society E&E System is a process, and how do you evaluate a process? You evaluate a process based on the results, not on the process itself. What is the end result of the E&E process?

FROM THE FLOOR: Fellow of the Society of Actuaries (FSA).

MR. BYKERK: Right, becoming an FSA. I’ve given this presentation about two or three times now, and a very relevant issue that’s been brought up is that another result of the process is becoming an Associate of the Society of Actuaries (ASA). The question is whether we have that as a goal or should the goal be FSA. But, then how do we deal with the ASA? We can maybe take some questions on that later. However, at this stage, we focused on the ultimate goal which is the FSA.

If we’re saying the end result or the product is an FSA, what do we want in an FSA? We’ve spent a lot of time discussing this topic. We came up with five specific skills or qualities: analytic and problem solving skills, communication skills, organizational skills, retrieval skills (I’ll come back to that in a second) and business skills. Now the first three I think all of you would immediately say, yes, that’s fairly consistent with where we’ve been in the past. With respect to analytic and problem solving, you know we’ve been trying to drive or move the exam system to more of a problem solving kind of approach.

Regarding communication skills, traditionally, we haven’t always been the greatest communicators, but I think we all realize that it is an essential part of what we’re all about. We can have the best solution, but if we can’t communicate it to somebody, we won’t sell it.

Organizational skills are again very important. I think all three of those were there before, but perhaps we’re fine tuning them a little bit more. But what about retrieval skills? Back when I took the exams many years ago, it was sort of a joke that you’d get asked questions like, “What’s the fifth word on the second line of page 58 of the demography textbook?” You know we’ve tried to stop doing that, since in today’s technological age with the explosion of information, what we need now is retrieval skills. We need to know how and where to go to get the information, not necessarily that we remember all the information.

Finally, we have business skills. This created some discussion as we presented this to the board. People ask if that is an important element of being an actuary. Should they have business skills? Is that one of our goals? And I think the consensus was that it’s an important element. If you don’t have at least some level of business skill, you’re going to have a very difficult time moving into a position in which you can use the knowledge that we’ve given to you. So it may still be somewhat controversial, but we will continue to work on expanding that.

Next, we talked about the process. We asked the question, “What does the process do?” We decided that it serves three primary purposes: to track potential actuaries, to screen potential actuaries, and to educate new actuaries. You’ll notice that our name is the Board

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Task Force on Education. I believe, in the past, we have focused too much on the examination end and not enough on the education end. Education is what we're talking about here. Examination is a way of making sure that we've provided the education. What are the key questions that we need to ask ourselves at this point? We're talking about the result as being FSAs which is what the process produces. Do we need different FSAs than the current E&E system is producing? Do we need to change the candidates attracted to the profession? And do we need to change the focus of the process? Those are questions. I will not answer them right now, but those are key questions that we developed for ourselves as we moved forward. Again, when we get to the end and you have a chance to ask questions, the purpose of this communication is to have a two-way dialogue. We're interested in your comments, input, and so forth.

Now, Bob will discuss where we've come from in the past relative to changes to the E&E system and the whole education process.

MR. ROBERT D. SHAPIRO: I should warn you in advance that unlike Cecil, I've had absolutely no direct involvement in the education and examination process. I've not been on the exam committees. I've not been in the process. I come at this from a little different direction. I spent most of my time on the Committee on Planning, the Actuary of the Future effort and things like that. So basically, I'm unencumbered by facts, but I do have some thoughts on this thing. Perhaps, they are driven from where many of us would like to see the actuarial profession land in the next five or ten years and what that might mean for all of us. But let's look at some of the evolution that's taken place over the last ten years inside and outside the education and examination process, which is very consistent with the present initiative on education.

The FES/FEM effort, which is flexible education systems and future education methods, was developed in the mid-1980s. The Actuary of the Future effort was initiated in 1988. I'll spend some time trying to link that to what we're doing here. It started out as a board task force and wound up evolving into a section once the basic plans were laid out, and they needed a group to enthusiastically and energetically implement it. The section has been in existence for a couple of years now.

There's been a continuing dialogue at the board level and in all sorts of committee discussions on the relationship with universities and trying to somehow corral all the resources and strengths possible to bring to the table in the education of actuaries. Back in the early 1980s, the E&E Committee was dealing with the vision for education of the actuary. And all through the 1980s, the Committee on Planning every year would have an agenda item called, "The Value of the Actuary." How do we continue to keep the value of the actuary as high as other professions? How do we continue to have the actuarial profession held in high esteem? Every year that issue was being addressed. It kept coming up and it kept reappearing, primarily because I don't think we could ever get our arms around it to the satisfaction of everybody, partially because there's something more fundamental gnawing at us. I think it's reflected, in part, in this current education review effort of the Board Task Force on Education. The Foundation that was set up by the Society was in part spawned from all this concern about where we want to place this profession and the desire to not wait until we have to react—a desire to do something proactively. These are all basically

responses, without a broader vision, to what amounts to fundamental changes in the rules of the economy and the marketplace for actuaries.

Let me spend a minute on FES/FEM. FES was developed to facilitate a number of educational thrusts. One was to increase the variety of courses and electives. The second was to provide credit for nontraditional methods of education. The third was to evolve changes in the education process in a timely fashion. Next, to respond to professional issues as they would come up, and also, to accommodate specialty thrusts and national tracts. And in a sense, you can see that this was still sort of reacting and not particularly trying to craft a vision. If you look at the words, there are words like *increased*, *evolutionary*, *respond*, not words like *creative*, *anticipatory*, and so forth. But, I think it was the best we could do back then. I don't think the environment was clear enough to us back then to have done any better than this. I think that it fit the times. What we've seen in the last five or six years has helped us understand that things will not be the same, and that we're too valuable a profession to continue to drift in this evolutionary fashion. These changes are in the right direction. But, they still embody a hazy vision of what the actuarial profession needs to be like. Our fear was if we continued just to increment our way along, the gap between what we wanted to be, what we could be and what the public needs us to be, would widen.

The connections of FES/FEM to this new educational thrust are many. One of the FEM objectives include enhancement of the value of the FSA. As I said, that's always been a concern. I think the focus has clarified a great deal in the new educational thrust in the sense that we're starting with our users. Who needs us? How do we need to educate ourselves so that we provide what our users need today and what they will need in the future? So now it's very clearly customer driven and future driven instead of "How do we improve on last year?" We need to try to separate ourselves from what we've always done, long enough to think about what's going on in the public and what their needs are going to be. We need to focus on how we bring something unique and distinct to those needs and try to build to that rather than just continuing to chip away at what we've had. Once we get the design clarified (and we don't have all these pieces clarified), that's the effort that will follow. Once that design is clarified, then we will have to migrate as quickly as we can from what we're doing to the new approach. It won't be incrementing away from last year at that point. It will be a path to get us to the kind of profession, and education of that profession, that we're starting to clarify and define. I think many good things will follow. We'll get a better educational system that's key to the future needs of the profession, not just an improvement on last year. One of the problems we've seen in the incremental approach which works when you're not changing quickly, that is, when the environment's not changing quickly, is that you tend to keep adding and never subtracting. You need to step back and say, "No, we can't have people taking exams for 77 years." However, we have to keep the exam intense and keep the same kind of rigor involved. There's a point at which you have to step back and say, what is our public going to need and how do we sort or reshape this so that we keep the intensity and rigor without just adding more and more on top of things.

So, all these things that have been happening, have been happening in the right direction, but they're not going fast enough and they're not going to something that's clear enough. I think we're starting to see now that a lot of our old rules have broken down. Ten years ago

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there was a clear path, for example, to the chief actuary's job in most companies. As companies restructured and financial services have tended to become a hazy conglomeration, chief financial officers (CFOs) have become more prominent than chief actuaries. You see companies restructuring and becoming something different than we were used to ten or fifteen years ago. All these changes, and more, anticipate what's likely to be next. You can start to see that we need to rethink where we're driving and how we maintain the kind of importance that we have to not only the institutions we've always been in, but those institutions that haven't used us so much; some that are evolving and some that we just never thought of before. We need to think of institutions where we can bring something special to the table if we just step back and recast the way we look at things and then support it with education and research.

Let's talk a little about the Actuary of the Future connection which I know more about. The Actuary of the Future effort was spawned back in 1987 by a Board of Governors that had gotten sick of dealing with issues like the value of the FSA or planning for the profession. The Actuary of the Future report, which was delivered and adopted by the Board in 1988, basically made recommendations concerning future roles of the actuary, and those activities like education, research, and professional membership support that would enable actuaries to fill those roles. There were recommendations in this report regarding the mission or vision for the profession, as well as the core intellectual and scientific center of the profession where there are needs in the marketplace for actuaries. We just need to clarify them and find a way to match the need with our skills, and we have to develop support within the profession to do these things.

Like most big organizations, insurance companies, and professional bodies or governments, there are a whole bunch of wheels that are spinning that want to keep spinning. Since the start of 1988, I think we've made real progress, but for the purist, we've probably made 15% of the progress towards what we would like to do because it takes a long time to slow down some of those spinning wheels. In 1990, we got another charge for the Actuary of the Future Task Force from the Board. I think it was spawned, in part, because of the concerns about the job market and the fact that actuaries weren't as readily employable as they had always been. The fact that we were putting many people through the exam system was often brought up. We were told to identify and prioritize nontraditional opportunities in roles for Society members and to develop a plan to implement that. When we put the Task Force together, we made a very clear decision that we were not going to drive this from the standpoint of finding jobs for actuaries and be looked at that way by the public and the profession. The intent was to drive this from what we saw emerging in the public markets—employers and governmental bodies. What was emerging was that the skills and perspectives of actuaries would add value, where it's not being provided today and doesn't seem to be provided in our future view. So we tried not to say, "Let's find more jobs," but we started out with saying, "Where do we add value to what people need?"

When we delivered our report in 1991, we outlined a whole bunch of nontraditional areas including improving the things we can do with our traditional employers, as well as expanding some of the roles that are natural to us. I don't think you necessarily take an actuary and have them do the public relations work in a life insurance company, but actuaries certainly have much to bring to areas like distribution planning, strategy work, and other areas where their analytical viewpoint is valuable. We also found a number of

nontraditional employers that actuaries have sporadically worked for, but there was no organized effort either to get them to communicate to the rest of us what they were doing, and why what they were doing was so anchored in the actuarial background, or to get these employers together. We found just limited research, but there is a great deal of opportunity there.

We then put forth a plan to identify nontraditional employers, how we'd inform actuaries about them, how we'd motivate actuaries to consider roles in those areas, how we'd motivate those employers to identify actuaries as valuable to what they're doing, and finally, how to assist the Society in preparing actuaries for those new roles. Elements included in those recommendations were modification or revision of the Society's education and examination content, recruiting objectives and career-related material. It was interesting that up until just a year or two ago if a student requested career information from the Society of Actuaries office because he or she was thinking of becoming an actuary, he would receive a book of Courses 100 and 110, calculus, probability, and statistics. Now what does that say about someone who we're saying brings financial analysis and management capabilities to enterprises with risk? It doesn't say the right thing, and we've been talking about that issue for a long time. It wasn't until very recently that we changed that. Some of us always thought we should show them 100–500 level courses and show them that we deal with real business problems. All those wheels that are spinning are things that are part of this existing system that we have to modify. If we deal with them a chip at a time, it just takes a long, long time. So part of what we've done here is try to lay out a framework that fits in the future; that we can build on, develop the details to and move more quickly.

One other aspect of what we concluded is what we call using the best source. We think the Society has a tremendous responsibility to do the analysis and thinking and to design the absolutely best education system for the actuary as we want to see the actuary in the future. However, we don't think the Society has to do everything that is involved in the final educational process. Our next responsibility is to find absolutely the best place to get each piece done. This may often be at universities or maybe through other professional organizations that have programs or something that can provide a piece of what we're doing. The important thing is that it's done professionally.

It might even be seminar organizations. There are a whole bunch of other organizations, but I think we've established a principle that we have to do the absolute best job of designing the system and then making sure it's managed correctly while not necessarily doing every piece of the system. This would be done by setting standards for external outsourcing partners that are as rigorous and high as they've always been for our own efforts. So we believe this has many benefits for education. We can obviously use the best methods and materials. We can't create everything within the Society. We don't have the resources even with the tremendous volunteer program we have. We can get the real experts to do the teaching, not just the people who are available to teach a seminar, for example. We can get new material more readily especially in some of the emerging areas such as investments from practitioners on Wall Street or research from the universities.

In trying to identify how we see the actuary, we've come up with this definition. Actually, it's not our definition so much as it's evolved from all this other work. The actuary is a

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professional who assesses and manages strategic and financial implications of risk. It does not say the actuary is a technician who assesses and calculates financial items related to life contingencies. It says professional not technician; it says manager not calculator; it says strategic as well as financial; it says risk, not life, health, property/casualty. So it goes well beyond how we're perceived today, and much of how we're educating today. It goes beyond life risk. It's not just the insurance and pension business and so on. In a sense, think three dimensions about the businesses we're in and the businesses that need us. We've been in life insurance, property/casualty insurance, pension and so on. The businesses that need us include hospitals, utilities, banks, and many other businesses. We can think in terms of functions involved in pricing, costing, and valuation. You can think in terms of functions that we bring a number of special skills and perspectives to the table, like planning and distribution management. We've often been perceived as having a very narrow financial calculation perspective. We need in this era more than ever to be able to put everything we do within a management context. That doesn't mean we all have to be speakers like Cecil, but we do have to be able to communicate what we're doing within the context of the business decisions that are being made. If you looked last year the perception was calculator, life insurance, pensions—a narrower perspective.

I think we see in the future, broader businesses we'd serve, broader functions and a broader perspective, but never violating the specialist. We don't want to be all things to all people. We do some things very specially and we don't want to lose that. But we also don't want to foreclose areas where the public needs our skills. So bottom line, actuarial roles in the future, we believe, will be different. It will not be just what we're doing now with our current employers, but we'll be doing different things with different kinds of employers. Conceptual issues will be more important. All businesses need the kind of financial modeling we do. There have been actuaries that have done things in pollution control. There have been actuaries that are doing things beyond just pension work and AD&D. Actuaries have been involved in many roles and if we had the ability to pull out all the things actuaries have done and tried to identify where they're adding value, we think it's there. We just haven't been able to do the total research. So I guess our conclusion is, we need to take steps now. We probably could survive without taking some of these steps, but survive isn't enough given how complex this society's getting and how well we deal with complexity as a profession.

MR. BYKERK: The Board Task Force presented its work at the January 1995 board meeting. At that meeting, a resolution was passed directing the E&E Management Committee to develop a syllabus to encompass certain principles. What we're trying to do here is to define principles and then drive down from there. One of the things we tried to stay out of was a great deal of detail because all of you know that actuaries love to rip at detail. You give them something and if it contains detail, they will pick it apart. We would never get agreement on anything if we put out the syllabus right now and gave it to 100 actuaries and said, "We've received two times the amount of material we can have. What's the right amount of material?" Each actuary's list would be different. That's our nature, I think, but it's probably human nature as well. So we tried to stay out of the details. That frustrated many people because they kept saying, "Well, we know there's something back there. Just tell us so we can know where you're going." It's not back there. We're trying to define principles from which we can build a system or a process that everyone will agree with and when they get into the details and they say, "Gee, I don't know if I agree with that

detail." They can look back and say, "Well, it follows from the principles that we have." We'll never get total agreement on the entire set of details, so what are the principles here?

The E&E Management Committee is directed to revise its goals to focus the syllabus to encompass four principles. The first is to examine only those subjects that cover essential elements of an actuary's education. Some people might think back to FES/FEM when there was a vote about college credit. Some initial reaction now is that here goes college credit again. We're not doing that. It is not college credit equivalence. What we're saying is that there's certain subjects that we have tested in the past—I would hesitate to say that we ever educated on those subjects, but we tested those subjects—that other people are better able to educate and test upon. Some of you may remember that we used to have an English exam. It used to be Part 1 and we got rid of that. Maybe we should still have it. My wife is a college professor and based on the papers that she reads, she would probably say we should have that exam. If you go further back, to the 1930s, we had three or four exams on calculus and several on analytic geometry, and so on. We had twelve exams. They were almost all math oriented. We don't test all of that any more. We need to change and evolve. What we're saying here, is that certain subjects we're going to presume you have. We assume you can read and write and so we don't test that. That's the concept we're talking about here.

The second principle we've discussed at great length. It's been a bit of a controversial statement. It reads "to provide business contexts with rigor consistent with that of the mathematical education." As Bob talked about, we give Courses 100 and 110 as the example when someone asks the question, "Do I want to be an actuary?" We send them a book and give them calculus problems and probability and statistics problems. We're talking about business in its most general sense. We're not talking just about the insurance business but business in a general sense. We need some education there but it has to be rigorous. We're not creating MBAs and we are not going to end up with just something called an actuarial MBA.

The third principle reads, "Include all kinds of contingencies, not just life contingencies." I think we've covered that. And the fourth reads, "Include models from outside the pension and insurance fields." The second thing that was agreed to by the Board was that we should restructure actuarial education into four categories, "Preliminary, Basic, Advanced and Professional Development." We would obtain each of these categories of education from the best available source. Again just to remind you, the focus here is on education. We're talking about educating actuaries so that they can go out and do their job.

This took place in January. Since then, we've been trying to work on all of those things. One of the things that we struggled with was that people are having a very difficult time getting their arms around what all of this means. They continue to ask "What are you talking about? What is this thing going to look like?" For a while we resisted giving them something for fear they would take it and start ripping it apart without focusing on the principles. However, the time has come, so we released the placeholder design. The end product might resemble this design, but this is not meant to be final or absolute. We still want your input. The placeholder design indicates some elements of each of the four categories, who will supply the categories, who will test each category if testing is necessary, the approximate percentage of the total effort contained in each category, and the



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typical subjects included in each category. Now any one of those may change when we get to the final product. Let's talk about the Preliminary. Remember, this is category one.

What is the Preliminary? It's those subjects that are probably necessary, but not actuarial. Nothing unique about them is actuarial, and they are generally taught in universities and colleges. Examinations given in the latter categories will explicitly assume knowledge of these preliminary subjects. Calculus and statistics are examples. What we're saying here is we will structure the exams later on and the education later on so that in order to pass those exams, let's say contingencies, you need to have had a certain level of knowledge about these subjects. We would stop testing these. We would stop claiming that we educate with respect to these; that's the concept here. The supplier would be primarily undergraduate courses or self study. We're not saying someone has to go to college or that they have to take calculus from a college course; we are going to assume they have a certain level of knowledge. What percentage should Preliminary be of the total syllabus? Maybe 15%. Technically, Preliminary isn't part of the syllabus, so how far back do you go with it? I mean, do you go clear back to 7th grade algebra and so forth? No, we don't, but right now we're sort of working it in the context of the current syllabus.

The second category is Basic. It is those subjects that are actuarial in nature and that all actuaries need to master. How will we provide for it? Well, the supplier will be self study, SOA, CAS, intensive seminars, and, I think, some actuarial schools might provide education here. However, they would be specifically tested by the SOA or the CAS. By the way, we are communicating with the CAS as well as the CIA. The CIA is very much behind what we're doing. They're only saying, "Hurry up." They have some governmental requirements about some of these things that they're interested in. So far, we've communicated with the CAS Board through its Executive Committee. They've now established a committee to be looking at these same things. To date, they have not endorsed this, but they have not risen up in opposition to it either. They see the same kinds of things impacting them. We think that category two is about half of the total of what we're talking about here.

The third category is the Advanced category. This has specialty subjects that actuaries in a particular field need to master. The two real key things here are that they're stable over time, and they're not country specific. We are allowing for some specialization here. The issue of tracks, by the way, is something that we've had some discussion about, and we have not come to a conclusion about. So your thoughts on that would be of value to us also. With category three, Advanced, the suppliers are self study, SOA and CAS. Again, these would be specifically tested. So categories two and three would be very much like the exams today and the education today. Advanced would make up about 25% of the syllabus. This would mean that Basic and Advanced would be about 75% of what the new system would be. I hesitate to keep relating it back to the current system, but people seem to want to do that. We're saying that these categories would be equivalent to about 75% of what the current syllabus is.

The last category is Professional Development. You're aware that the AAA has a continuing education requirement. We are not talking about continuing education at this point. That's not part of our charge. Somebody else may decide that later, but we're not saying that's part of our charge. What we're talking about is some specific material that is country

specific or may change quickly over time. We're saying that's the kind of thing that should be in Professional Development, that is, constant relearning. Just because you get your fellowship designation, you don't stop learning. You keep reading. Your briefcases are probably overflowing. If you're like me, you sort every once in a while and say, "Well, I can't read that much." You sort out the things that are most important but you're constantly changing, learning new things. That's where this comes in and we're saying the fourth category, the category that sort of tops off your fellowship, should contain a certain amount of that kind of material. Material that brings you up to speed in your specialty area, in your country. Courses might be nation specific and/or address specialties. For supplier, we're looking at a real broad list. It could be the SOA, the CAS, the AAA, the CIA, EA exams, business schools, and so on. You probably get fliers all the time for various seminars. Some of those might be considered. With respect to testing, we're thinking at the moment in terms of it being primarily self-certified by the candidate. Maybe there's some demonstration through enrollment status, but there wouldn't be specific exams. As a weighting, we're thinking here about 10% of the syllabus. Finally, we would continue to have the fellowship admissions course (FAR) for ethics and professional issues.

Now the latest on where we're at. At the Board meeting that we had one week ago, it was decided that due to the importance of this project that a new board task force (yet unnamed) would be setup. This board task force would have the responsibility for designing and implementing the new education system in accordance with the principles that we just went through. The thought here was that as we design and implement, we're making policy decisions and those policy decisions need to be brought back to the board for their approval before we go forward. If you look at the bylaws, the constitution says that the board is responsible for setting the requirements for receiving FSA and ASA designations. I will also mention that we have set up a design team and that it will hopefully do much of the detail work trying to put this together. We asked Jeffrey A. Beckley to chair the design team. Jeff was scheduled to be the general chairperson of the E&E Steering and Coordinating Committee next year. He has given up that opportunity to head up this design team. He's well positioned and knowledgeable. We're trying to select the rest of the team as we speak.

Regarding the timetable, I mentioned earlier that we're trying to get out and talk to people. This summer, we're hoping that by mid to late June, we will be sending a mailing out to every member of the Society for their input. The next milestone is in October which is the next Society Board meeting and we've been asked to bring a first draft of a syllabus, an ASA definition, education providers, financial implications, and transition plan. One of the concerns over this big change is how does this impact the Society financially? We have a very sound organization right now, but we're not stoking lots of money into the surplus line at this point in time. So will this have a positive or a negative impact on us? If we decide to stop testing some of the early material—doesn't necessarily have to be early material but that's sort of the general way of thinking about it—how will that impact us financially? Now I know that there are a number of Associates so we think this is an important element as well. We're not saying these are the only equity principles that we have but we have articulated at least these three:

- to ensure that the transition creates minimal dislocations for current students;
- to ensure that the value of the FSA is at least on a par with the current value of the FSA; and

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- to maintain a long-term perspective of how we can change this and evolve in the future.

If we are successful in creating an environment that educates FSAs in a superior way to what we have had in the past, the current FSAs like myself might worry about whether that means there's going to be a little asterisk by our name that says this individual passed his or her last exam in 1973. Well, our feeling is that FSAs continue to educate and reeducate themselves and grow. We're not putting any FSA out of business because they should be growing anyway. But what we're trying to do is to do a better job of educating actuaries in the future so they have many more opportunities, particularly, in the nontraditional roles.

MR. AARON TENENBEIN: I'm a professor of actuarial science at New York University. I think that there are a number of very important issues that you are attacking. In particular with respect to where the actuarial profession is going, particularly as it relates to my colleagues and the rest of the business schools including finance, statistics, and actuarial science. The actuarial profession has been criticized in the past for not being current with what's happening in other fields.

I think this proposal is a very good step in the right direction. In particular, your emphasis on the basic topics not just being mathematics, but also including business topics such as finance, economics, accounting, and marketing. It's very important for the education of the actuary. In many cases, a student who happens to be a math major and just studies math, doesn't necessarily make the best actuary. A generalized education probably would provide a better preparation. One concern I do have is with respect to the testing of the earlier exams. I think removing all testing on the earlier exams is somewhat too radical. This is especially true with respect to the mathematical exams. I think essentially there are some examinations, for example, the earlier mathematical examinations, that should be revised by abolishing some of the topics. I've been involved in the current changes in Course 120, the applied statistics curriculum, which took analysis of variance out of the topic. I think it's very good on paper to say that these people will have the background. But I think in terms of what's going to happen in practice, there is a danger of dilution of the mathematical ability of people going into the profession. I realize you are going to try to do it at the higher end, but that could be a difficult process to manage. On the whole though, I think this is a very good direction to go. I would urge the committee to take into account perhaps one of my earlier comments on the basic idea of testing at the earlier examinations.

MR. BYKERK: I should mention that another task that we think is extremely important in moving the process along is the definition of what the attractor exam(s) might be. We're thinking in terms of perhaps some mathematical testing in those exams, but it remains to be seen exactly how we can design that. So we're thinking now that we need to get an attractor exam or two designed, get it out for exposure and see how it fits with what we're trying to do here, but those comments are well taken.

MR. CHARLES E. MOES, JR.: I was on the E&E, or the Exam committee, for eight years, so I am very familiar with the educational or examination process. I'd like to applaud the Task Force for the work it's doing. I think it's timely and a very good thing to be taking a comprehensive look at the educational process for this profession. You mentioned in your initial remarks, Cecil, that perhaps there was some breakdown of communication in

the past. I would strongly second that, and I hope that as it looks like this time around, you have to have a definite plan to avoid those kind of breakdowns and I applaud you for that. Just looking at it preliminarily, which is all I've had a chance to do so far, I think that the idea of a Preliminary, a Basic, an Advanced, and a Professional sectioning of the education process appears to be very logical and it looks like we're on the right track. The concern I would share today is that in my experience, in the 12 years since I became an FSA, the closest we've come to a rebellion in the profession came over the issue of college credit. I hope that some of the mistakes that were made at that time can be avoided this time around. If you end up making significant changes to the education and examination process, and it looks like that needs to be done and we're on the road to doing that, I would hope that the Board would get as much input from the membership as it possibly can including a vote of the membership. I think it's well advised for the Board to make the case in a comprehensive way for all the changes that the Board feels are necessary. The process of education and examination is a very important process to this membership and obviously one with which we're all intimately familiar with, painfully familiar with in some cases, and I think the board will be well advised to make sure that they have maximum extent of feedback from the membership.

MR. GEORGE L. ENGEL: One of the things I noticed when I was taking exams, and I'm now administering them, is that we try to get feedback on the examination conditions from the people taking the exams. However, I noticed when I was taking them and I lived in several places, Chicago, IL and Appleton, WI, there's a big difference in the conditions in which you take the exams in different places. I'm just talking about things like crowdedness, that is, room to work. I suppose that's probably the biggest one. Certain things like having water available are important. If you need to go to the bathroom and there's 50 people in the room, you might have to wait a while. Now this is kind of humorous but it's not humorous if you're taking the exam. Things like that may not drastically affect the exam, but can affect the person's performance on the exam. I'm wondering if maybe you could consider some type of feedback from exam takers each time, perhaps a survey to find out what they think of the conditions.

MR. BYKERK: I know that's an issue that comes up, and it normally comes up in a negative way when some conditions have impacted somebody. That's an area that we need to continue to focus on and make sure that we try and standardize the conditions and eliminate problems. However, that's not always totally possible.

MR. BEDA CHAN: Without much detail on the new plan, I will base my comment on what was presented. It looks like the plan is not to test the first 70 credits and put the last 50 credits as Professional education. My comment concerns not testing the first 70 credits. It is true that the materials in the first 70 credits have been useful in many of the later topics and therefore competence in the later topics will indicate a certain level of ability. But perhaps, doing a very simple 130 model, for example, a queuing theory type model, would be a good idea. However, if we do not test 100, 110 and probably 120, then the SOA may have to contemplate passing only 20% of the candidates in the earlier part of the later topics. With the current situation of testing 100, 110, and so forth, we are doing the candidates a favor in the way that we give them a good indication of whether they have, at least on the mathematical side, the capability of successfully achieving the earlier requirements of being an actuary.

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MR. BYKERK: I guess my comment on that is that we're aware of that issue. I guess the analogy that I give is like the pole-vault. You can pass and not attempt a height and go to the next height, but sometimes you end up not being able to get over a height that you could have if you had been doing it along the way. So we're aware of that and I guess that's why we think that we need to do some hard work on attractor-type exams. When we say attractor exams, we're saying in the same nature as the Course 100 is now. It's an attractor exam. People say, "Well, gee, I'll go take that and see if I can qualify," and start forward. But it's also been suggested that we develop some aptitude tests, which, of course, would not be official from the point of view that you have to pass the aptitude test to go on. You probably remember, we used to have an aptitude test and it was eventually thrown out because it wasn't certifiable or whatever, but the perplexing problem with this is as Bob said earlier, we keep wanting to add and add and add and we never want to take off and knowledge keeps growing. What do we take off or what do we not add? So we'll move forward cautiously in this area and it's not written in stone yet, but we'll have to address it.

MR. CHAN: A related comment on the issue of continuing to add topics. The importance of computing to actuarial science is clear, but the error of computing is not addressed on this new plan. Perhaps it's currently so because by the time a plan has been formed with respect to computing, the knowledge would have been leapfrogged. However, it may be appropriate to put brief comments on computing in the new education plan as well.

FROM THE FLOOR: I guess speaking as a relatively new ASA, it's good to hear that you don't want to dilute what the FSA means now, but it would be good also to hear that you don't want to dilute what an ASA means now. I haven't heard that yet. You talked about how you wanted to attract different people to the actuarial profession. I'm curious what kind of different people you want to attract. Is there a quality in the current FSAs that is lacking or something of that nature?

MR. BYKERK: Well, I'll attempt to answer your first question, and then I'll let Bob answer the second one. Then I may have a couple more comments but I'll give him a chance to think of what he's going to say. With respect to ASA, frankly the Task Force's initial focus was on FSA as our end result. That was our focus; I will admit that. However, in these presentations, it has come out that this issue of ASA is a much more critical one than I certainly thought it was. I'm having people come up and say, "Gee, I work in a small company and we need our FSAs, but if we didn't have our career ASAs, we wouldn't be able to run our company." This has certainly given me a different perspective and that's what all this communication is about. We knew that one of the tasks along the way was defining what an ASA is, and you might be happy to know that we do have a working definition of ASA. It may sound trite, and I'm not sure I can recite the exact wording of it, but it's something along the lines that the ASA should be at about the same level that it is today. Now the question is where that fits into the structure that we've designed here if, in fact, this is the structure that goes forward. Is it after Basic? Is it after Advanced? Is it all? All those are valid possibilities. I do think that through this communication process, we're gaining a greater awareness of the concerns out there. We aren't going to say, "Gee, you were an ASA and now you're not." That's not going to happen, but we need to spend some more time discussing and communicating. We need more input from people about how they view the role of the ASA and how it fits. Where is the defined break off point where you become an ASA? I'll ask Bob to comment on the other question.

MR. SHAPIRO: I don't think we have any answer as to specifically who we want to attract but who we're not attracting. I think in the past, especially with the article that said the actuary has the best job in the world, lots of people started coming through the system. We collected many exam fees, and the Society became dependent on these fees. Then all of a sudden, people didn't have jobs. I think this whole process is forcing us to step back and ask ourselves, "Are all those people we're attracting, attracted for reasons that would lead them to serve the public's needs that we see evolving in the future?" What's going on here? What do we want them to see when they do get attracted? For example, if the SOA received numerous requests for information from people who read the article stating that this is the best job, in return, do we want to send them information on Courses 100 and 110? Maybe many of them were very good mathematics students who hadn't much business contexts. What are they thinking of when they started taking the exams? Maybe as we think through this education process and design the system, we'll have a better idea of what we should start with in terms of character on the front end in order to get the best product at the backend of the exam process which fits with the public needs. I don't have a very good answer to that. Probably more people like you and me, but I'm not sure.

MS. EUGENIA BOMASH: I'm a recent FSA, so I was very glad to hear that you are not going to make anything easier for future FSAs. I also was very glad to see new exams on the syllabus. I took all my electives in investment, and I found it a very exciting and related topic. My question relates to your general definition of who we are, people managing risks. It doesn't give the specifics that our profession traditionally dealt with. How do we differentiate ourselves from derivative traders if we are just people managing risks? I think that even though we need broader skills in general financial topics and risk management, there is still a traditional core business that we are associated with. Do you think that it should be a core content of the exams? And one other comment before you answer, please. If you're thinking about what to take off, I can give you a suggestion. You can take a look at the Canadian Social Security system. You can take that out of the exams that are required for American FSAs.

MR. BYKERK: I'll comment on the last comment, and I'll have Bob comment on the other. In all seriousness, as a FSA or as an ASA, if you think there's material on the exams that shouldn't be there, let us know. What we're trying to find out is what things are we providing education for and testing on that no one is using. Is there some or is all of it used? Maybe some of it is for some people and it isn't for other people and so on but anyway, Bob, you want to try and answer the first question?

MR. SHAPIRO: I wish there was a very good answer there other than the one I'm going to give you, but I guess it almost starts with a different premise. Where we come from has been driven by insurance companies and pension plans; functions like costing, pricing, and valuation with a technically driven perspective. As we look ahead, insurance companies aren't just insurance companies anymore. Pension plans aren't pension plans as we knew them. The technical stuff that we used to do when we had a chief actuary's track needs to be housed in a business context if we're going to be the CFO. Everything is changing so we're trying to drive this less from what we've always done with businesses toward what does the public need that we can bring to the table that's special. It's not saying we're going to do anything less with insurance companies and pension plans, it's just that if we keep defining things that narrowly in terms of those contingencies, those businesses, and define

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the way we look at accounting and structure and everything else the way it's always been, we will never get to the point where we're ahead of anything. Suppose that if in the year 2005, for example, there are no insurance companies but all the lines are blurred between which institutions provide you with insurance, banking and other services. If, in those cases, costing and pricing is all wrapped into customer management, you don't value things in terms of traditional scorecard. They're looking at customer value and that's all part of the marketing and distribution process. There's nobody better than us. As you mix all these things, we're so good at dealing with the general complexity. I don't have a perfect answer as to which ones we have and which ones we don't have. Look at it in terms of risk not just insurance. Something else is happening in this country and the government's running out of money to take our risks for us so it's passing it down to us. Employers don't have money to pay for much of the risk, so they're passing it down. So who's it going to come down to? Much of the risk taking in the future may come down to individuals.

FROM THE FLOOR: But they're not able to deal with that now.

MR. SHAPIRO: I'd say we deal with risk better and with more perspective than any other professionals, even down to personal financial planning and retirement planning. I personally don't think there's anybody else better equipped than an actuary to help somebody. I don't have the right answer, but who else is going to do it with the perspective of an actuary?

MR. BYKERK: One of the things that we have on our future agenda to do is to contact employers of actuaries and say, "OK, what do you need? What qualities and skills do you need in an actuary for you to hire an actuary? To pay the cost and pay the salary that you're going to have to pay, what do you need? What's unique about an actuary as opposed to an MBA?" And as Bob has tried to explain, I think we've talked about that. We spent a great deal of time at one of the first couple of meetings talking about the core competencies of actuaries. What sets actuaries apart? There isn't one thing that you can say that if an actuary has this, they're an actuary. The closest we come from an exam perspective is contingencies. But still that isn't universal throughout the whole thread. I think we have time for about one more question, and then we probably need to wrap it up.

MR. FRANK M. GROSSMAN: As a Canadian visiting New York City, I don't doubt that there are some Americans who feel there isn't anything to be learned in the Canadian Social Security system. Our American friends seem to be doing just fine by themselves. I have a request for clarification on the weightings of the four stages. Preliminary is to be 15%, Basic 50%, Advanced 25%, and Professional Development 10%. Is that content, travel time, or emphasis?

MR. BYKERK: I think the answer is yes. As I said because people ask the questions this way, we've tended to structure that along the lines of the current syllabus. If the Preliminary goes away, then it's not part of the syllabus, and that 15% isn't there any more. But we've sort of tried to set it out that way. For Professional Development we had 20 days. On the surface, people say 20 days, my goodness, how do you expect people to do 20 days worth of seminars? Yet when you multiple 20 times 8 and get 160 hours, in reality that doesn't sound like too much. We were trying to think of some things like that; so many

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days or so many hours worth of Professional Development. But the numbers that are in here right now tend to tie back to the current syllabus.

MR. GROSSMAN: My observation would be that at this stage it doesn't seem like the SOA will directly test that first 15%, the Preliminary stage. The Preliminary and Basic combined seem to proxy the current 100 level exams, roughly 200 credits. Then the Advanced plus this additional Professional Development seem to proxy the current 200 and above level exams plus something extra. This is now currently 250 credits. So there seems to me to be a very significant shift in the weighting of the material towards the Basic, and I'm wondering if that's overt or not.

MR. BYKERK: Did your comments take into account the redefinition of ASA to 300 credits?

MR. GROSSMAN: I understand your comment. I understood that the Basic section was fundamentally dealing with mathematical modeling and solutions. You're suggesting it also includes some of the 200 level material?!

MR. BYKERK: Right. Maybe we need to throw in an example like that so that to clarify it.

MR. GROSSMAN: I'd agree.