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## **Montreal Spring Meeting**

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### **Session 420F**

### **Education and Examination Redesign**

**Track:** General

**Key words:** Education

**Moderator:** ROBERT L. BROWN

**Panelist:** PETER HEPOKOSKI

**Recorder:** ROBERT L. BROWN

*Summary: The actuarial profession faces new challenges and opportunities in the future within traditional areas of employment and in new and emerging areas. The Board of Governors believes that the foundation laid by the task force and the design team meets these challenges and opportunities. With these objectives in mind, the Board of Governors, on October 27, 1996, in Orlando, approved the redesign. This session is intended to provide up-to-date information on the redesign effort. The session also offers an opportunity to attendees to provide input and ideas.*

**Mr. Robert L. Brown:** We will look at the new Education and Examination Syllabus, including Professional Development (PD) and the transition rules as they exist today. I'll give you just a little bit of an idea of when we hope everything will happen.

We'll start with a very cursory description of the courses as they will exist, and then we'll get into a little bit more detail for many of them. Course 1 is described as mathematics foundations. Course 2 has interest theory, some economics, and some introductory finance. Course 3 is Actuarial Models for Contingencies, and Course 4 is Methods of Actuarial Modeling. Course 3 is the models (and you'll see what that means in a minute), and Course 4 is the methods, having to do more with the estimation and fitting of the distributions. Course 5 is Application of Basic Actuarial Principles and it corresponds as closely to the existing syllabus as any of the exams; it's really Course 200 and 210 combined together. Course 6 is Finance and Investments and it comes close to an amalgamation of Course 220 and 230.

So, at that stage, it appears to be the logical place for associateship because it is after the 200 series, where the Associateship now lies.

Then we get into the Fellowship exams and they are small in number. There are only two formal exams: Course 7, Applied Modeling and Course 8 is a specialty exam. We will look at the topics that we hope to be able to provide material on in the first round of those exams. I think it's fair to say that they will change as the world around us changes. Now a few details.

In Course 1, we will be testing some calculus and some probability, but to the best of our ability, we're going to be doing it in a business context. One of the motivations originally from the board task force, was that we let candidates know at the earliest possible moment what it is that an actuary does. I would suggest to you that it is possible right now to sit and pass five actuarial exams and not have a clue what it is an actuary does. We didn't want that to be true in the future, so the very first exam will talk about risk assessment and risk management. We don't have good material for all of that at the moment. We may be writing some material. We also have some books and we will be referring students to those books. In my personal opinion, it will not be one-third calculus and one-third probability and one-third risk management. I would like it to be about 90% risk assessment and risk management, but you can't do the questions unless you know calculus and probability. In order for the questions to be couched in business terms, in terms of risk assessment and risk management, you will be tested in calculus and probability. Now I think we have decided that realistically we should have a few pure calculus questions and a few pure probability questions. We also want to make sure in a liberal arts college (if you will) that an undergraduate can write this exam. This is meant to be an attractor exam. It's probably going to attract someone in a math program.

If we turn to Course 2, we looked at this as another possible attractor exam. It is another exam that will tell people what it is that actuaries do. Course 2 covers some micro economics, some macro economics (at the moment I don't think we have enough macro economics in the syllabus of the Society, and certainly not at the introductory level or even in the compulsory exams). There is some fairly traditional interest theory, but then we will go on to do some introductory finance.

Again we're going to work very hard to keep this at a level that a liberal arts undergraduate could handle while attending college. I must admit that with all the things we'd like to do in this exam, it's looking onerous. There are a number of semesters of material. We have been looking at the later stages of the finance material and considering the possibility of cutting back on what is in Course 2, and shifting some solid finance material into Course 6, which is the investment exam

that now corresponds to Course 220–230. We want to keep Course 2 at an undergraduate level. We would see the possibility where someone in a business and commerce program would write this exam first, and we don't want to discourage that. Clearly we want to tell people that an actuary is a business person who works in a business environment.

Course 3 is already different than it would have been a few weeks ago. The Society of Actuaries at the earliest possible moment, in fact the day that we formed a task force, invited the Casualty Actuarial Society (CAS) to take full participation in the process of designing the new syllabus. The CAS had been thinking in their own terms of redesigning their syllabus and already had a committee in place to look at redesign. They decided to work somewhat in parallel with our committee, but we talked a lot and they knew what direction we were going in, and we knew what direction they were going in. One of the goals we had was to have as many exams co-sponsored as possible. I say this, in particular, to my academic friends. We really wanted to have as many exams co-sponsored as possible, so that an undergraduate student didn't have to make a painful decision at a very early stage to take one path or the other. We felt that the system and process would be stronger the more we could co-sponsor.

As late as January of 1997 we were looking at co-sponsorship of Courses 1, 2, 3, 4, and 6. It turns out that only Courses 1 and 2 will be co-sponsored. I am saddened to tell you that. We were able to find middle ground, but we couldn't find common ground. So if the two boards of the two Societies had said, you will co-sponsor more joint exams, we knew what it was going to look like, and nobody would have been perfectly happy. It would have been a really big compromise, but it was the middle ground.

One of the areas that used to be on Course 3 was statistics. Twenty percent of the Course 3 exam tested traditional and classic statistics. One of the principles first voiced by the board task force was that we not test on material that can be obtained elsewhere or tested elsewhere and was not purely and uniquely actuarial. So now that the Society is going its own way, classical and traditional statistics are no longer on Course 3. So Course 3 will now be purely actuarial models: quantifying the financial impact of contingent payments; survival distributions; process models; frequency, severity and compound distributions; and ruin theory and simulation.

Then, in Course 4, we do the modeling. You'll be doing the estimation and fitting of frequency severity and survival distributions, regression analysis, time series, forecasting and credibility theory. I guess the exam that comes closest to this right now might be the CAS Part 4B (if you're a Canadian that's a compulsory exam for

Fellowship in the Canadian Institute). Of course, the SOA has accepted cross credits for that for many years. So many of you will have sat for Part 4B CAS.

There's also a new book, *Loss Models: For Data to Decisions*, out by Klugman, Panjer and Willmot (Wiley, 1998) that talks about Methods of Actuarial Modeling and covers many of the topic areas here. Is that fair to say Stuart?

**Mr. Stuart Klugman:** It is supposed to appear in January 1998.

**Mr. Brown:** So it will be here in time for the exam syllabus, and I think that particular book may turn out to be one of the references.

Course 5 is fairly easy to describe to someone who is close to the exams now, because it really comes extremely close to being a combination of the present Course 200 and Course 210. We will be covering all contingencies. Notice that casualty programs are a part of Course 5 as well as some new nontraditional areas: product liability, warranty evaluation, and manufacturing applications. We use the word *manufacturing* sometimes when we create new life insurance products; some people view pricing and design of products as a manufacturing component within their job, but we're talking about manufacturing. We're talking about factory applications of actuarial science: the airline industry, the light bulb industry, or municipal operations, whatever it might be. We're talking about real classical manufacturing applications.

Course 6 would then be a combination of 220–230. As I said, there's still quite a bit of interplay with what will end up on Course 2 and what will end up on Course 6, because we want to keep Course 2 finite (the last draft I saw was 750 pages, but down from a thousand), and we want to keep it geared to undergraduate students. So it's a little difficult to see just how far you can go in some of these areas like derivatives and Black-Scholes. Some of those things become sophisticated pretty quickly. So it's still up for grabs exactly where that division will be.

You would achieve Associateship after Course 6 and then move into Fellowship exams, of which there will be two formal exams. Course 7 will require you to attend the Applied Actuarial Modeling Seminar, the length of which has yet to be decided. I think it's fair to say that in order to keep the length of the seminar to some natural limit, the student would get some information on CD ROM. Perhaps they would get the case study in advance of the seminar. The seminar itself would be in modeling and analysis of inputs and outputs. Notice here communication of results is an important part of what we want to do. Again the board task force said that one of the things we want to try to do is introduce communication skills into the syllabus. The seminar will be intensive. A couple of people who have been to

some of the existing advanced modeling seminars, as we now have within the Society, have told me it's a test of sleep deprivation. They definitely are intensive.

There will be an objective evaluation as there is today, and there may be practice specific topic areas. You could choose to go to a Health Course 7, or an Investment Course 7, so that you'll be taking something that makes sense to you, and you will be able to apply your knowledge. Now another issue we have here with the real person attendance seminar is our off-shore students. We're offering exams now in a multitude of locations and countries, and we are going to have to look at what we're going to do for these students. Hopefully, because we have large groups of students in Hong Kong and Taiwan, we will be able to offer these seminars there, as opposed to asking people to fly to North America. Remember they also have to fly to North America for the Fellowship Admission Course (FAC). So we're adding another layer of complication here.

Course 8 will be your practice specific exam. The topic areas that have been identified at this time are: finance, group life, individual and group health, individual insurance, investments, managed care, and the only one that is nation specific at the moment is pensions. Again, the board task force said that we should work very hard to not have time-specific or nation-specific material on the formal exams. That should be dealt with in the PD component of the qualifying process, which Peter will be talking about.

However it's quite clear that the way a pension actuary operates in Canada and the U.S., because of regulation, is so different, that it is going to be difficult to have a common exam at this level. Also, we did want to facilitate the Enrolled Actuary (EA 1 and EA 2) exams, as opposed to making them as more add ons. So we are hoping that if we do our job well, and with the Joint Board now talking about a complete revamping of EA 1 and EA 2, you won't have to try a whole lot of extra exams.

I might also point out that managed care, at the moment, is probably a U.S. health topic. It really wouldn't be viewed as a Canadian health topic. The Canadian approach with a large government system would fit into group health. Now this should not be viewed as an exhaustive list. Some day we hope to add specialties. If we had been designing this material 15 years ago, we wouldn't have had investments on the list. Perhaps 15 years from now we'll have some other specialties.

With that outline of the basic and advanced material I'm going to turn it over to Pete Hepokoski, who is going to take you through PD and the transition.

**Mr. Peter Hepokoski:** I will talk a bit about the philosophy of professional development. Think in terms of a candidate in the next century who completed the eight courses that Rob has just outlined. You're talking about an individual who has gone through a lot of self-study exams, who has attended the intensive seminar, built up a lot of on-the-job experience, developed a lot of professional relationships, attended SOA meetings, and kept up with professional journals, such as the *North American Actuarial Journal*, section newsletters, or other SOA publications. We're asking this individual, who is already a pretty good professional, to design his or her own education for the rest of the FSA process. This candidate is going to know how to best design his or her own program, what the needs are for his or her area of practice or situation.

There are some SOA guidelines that would relate to the choice of the education here. The education obtained by the PD component should further the candidate's development in his or her field of activity. If a candidate is practicing in a traditional field it's expected that the majority of their PD will be in that field, and use of nonactuarial education, where it is appropriate to the candidate's field, is encouraged. For example, a health actuary who intends to specialize in provider consulting may well take some medical classes.

The objective of PD is to cover topics that are country specific, regulatory or otherwise volatile in nature. It's an uphill battle for the SOA to maintain a syllabus on things that change often like tax laws, accounting treatments, insurance, or pension regulation. If some good educational sources exist for those topics, and they stay up to date and are widely available, our philosophy is that we should take advantage of those and not expend our energy duplicating what can be achieved on the outside. A couple of other advantages to PD is that seminars with an interactive format will have some value. It's also a good transition into continuing education regarded as a natural extension beyond the FSA.

The PD requirement is going to be 50 hours of education within a two-year period. We expect a majority of this, for most candidates, will come from seminars. Think of a typical seminar as maybe being 8–12 hours of education. We're talking about attending 5–7 seminars in a two-year period to achieve this. So it's not an insignificant expectation of our candidates. At least 50% of the education needs come from SOA approved sources. We will publish a PD catalog. I'd expect most SOA seminars to qualify. I would also expect that we would have a more formal and more regular pattern of continuing education seminars that would be used here. These would also be publicized further in advance than we were used to seeing. I would also expect many of the sessions at SOA meetings would qualify.

Exams can be used to satisfy the PD requirement as well. Up to 50% of the credit can be received, for example, from taking another Course 8 or the Chartered Financial Analyst (CFA), Courses 1–3, and the EA 2 exam would probably be another one. It's also possible that the Academy or the Canadian Institute might develop an examination that they would require for certain qualification standards for signing certain official documents. These might deal with some of the things we're talking about—regulatory and country-specific or time-specific issues. If that's true I would expect that the SOA would give PD credit for that. Another alternative is a research paper for which there would be PD credit available.

These are the steps in the process. First the candidate would develop a plan and review it with an advisor (someone selected by the candidate, and typically an FSA). The candidate would submit the plan to the Society office that would have been signed by the advisor. Fifteen hours is the maximum that could be counted from education acquired before submission of the plan. Then the candidate should complete the PD plan within two years of the first educational offering that is being counted. After having completed that, the candidate would prepare and submit to the SOA and to the advisor, a report of up to five pages, detailing the benefits that have been acquired through the PD program. Finally, attest to the completion of the program and the SOA would then affirm eligibility for the Fellowship Admissions Course.

Just a couple of other comments on that: you'd be able to begin the PD program before completion of Courses 1–8. However, any hours attained more than two years before your last course is passed would not be allowed. So you're taking a little bit of a gamble if you take longer than a couple of years to finish Courses 1–8. You must complete the PD plan before eligibility for FAC.

Just as an aside, I mentioned the natural transition from PD to continuing education. The Board of Governors has asked that the idea of mandatory continuing education be studied. This is an initiative completely separate from anything that we're doing on the board task force. It's at the inquiry stage at this point. But in 1996 the SOA conducted a survey of 500 randomly selected members of the Society, and there was 95% support for mandatory continuing education. This might be one of those issues where the devil is in the details, and if those 500 people were given some specific requirements, they might have said, "Well, maybe not." So I'm not sure where that's going, but I mention that to you as an aside.

The next topic is transition rules. In January 1997, we announced transition rules for the new eight courses and PD. However, we did not have details for the transition rules for individual Courses 1–4. We just had aggregate rules for those four courses. The reason was that the alignment of topics within those first four

courses hadn't been settled upon, primarily because of the discussions with the CAS that Rob mentioned a little bit ago. Now that we've reached a decision on where co-sponsorship is going to be, the final rules, including the details on Courses 1–4, are due to go to the members and candidates by July 1, 1997. The July 1 mailing is also going to give us a chance to clarify some of the rules that have already been announced. The feedback we've gotten from the membership and the candidates has made us aware of where some clarifications could be used.

I'll give a sneak preview of the rules for Courses 1–4. The final rules are being called conversion rules, not transition rules. We realized we'd fallen into the pattern of calling them transition rules because previous restructures had involved transition periods. This time we don't have a transition period. It cuts off at the end of 1999; a new system begins in the year 2000; and we convert credits from the old system to credits for the new system.

Course 100 will give credit under the syllabus for Course 1. Course 110, can also give credit for Course 1. If you have both Course 100–110, you'll get credit for Course 120 unassigned credits. Now those unassigned credits can come in handy right away because the conversion requirement for Course 2 is Course 140, Compound Interest, or 141 (which is EA 1 part A) and 20 unassigned credits. These unassigned credits can come from a number of other courses too, not just from the 110 combination.

Actuarial Mathematics, 150 and Risk Theory, 151 will translate into credit for Course 3. Course 3 can also be obtained through Course 150 and 30 unassigned credits. For Course 4 you could have any combination of three of these four courses: Course 120, Applied Statistics; Course 160, Survival Models and Construction; CAS 4B, Credibility Theory, Loss Distributions; or you could have 20 unassigned credits. Any three of those four would convert to Course 4.

These are the rules that have not been announced yet. There are other rules that we have had in place that were announced in late January 1996. Briefly, Courses 200, Financial Security Programs and Course 210, Introduction to Actuarial Practice, would convert to Course 5. Course 6 credit would come from Courses 220, Introduction to Asset Management and Corporate Finance and Course 230, Principles of Asset/Liability Modeling (ALM) or Course 220 and 25 unassigned credits. For Course 7, 50 unassigned credits could convert to credit for Applied Modeling. Finally for Course 8, the practice specific exam, credit would be given for 50 credits from required courses under the current syllabus within a single track, plus ten unassigned credits.



Unassigned credits not usable for any of those eight courses would then carry over and be able to be applied to reduce the PD requirement. That would be credited at the rate of one credit for one hour of PD.

I have a couple of other comments about unassigned credits. They are awarded for all courses for which you have obtained credit under the current system that you're not using for direct credit under the conversion rules. They'd be applied in ascending order. You apply them into the lowest number exam and then on up (with the exception that eight will come before seven in the conversion rules).

Overall, I think we have a fair set of conversion rules. Candidates are going to want to plan ahead and plan carefully. Each course is being given three times between the date that the rules were announced and the end of 1999. This will be a challenge to candidates. This is a little different than when we've gone from larger exams to smaller exams. Historically, partial credit was much easier to assign. Now, if you need two or three parts to get credit for a new exam, and you fall just short, your only partial credit might be some credit towards the PD requirement. I think most candidates are likely to feel that isn't an equal conversion, so a well-planned course of attack is advisable.

We've heard a couple of different approaches to exam taking that the candidates are talking about. Some expect to make only minor changes to their exam taking strategy already in place. Others will make sure that they pass a couple of exams to get the courses that they need for conversion and then maybe sit out an exam session waiting for the year 2000 syllabus.

The new system is scheduled to begin in the year 2000. We have not decided whether there will be any exams given in February 2000. Currently we give courses 100–110 three times a year, the third time being February. So it's possible that one of the courses might be given in February 2000. Certainly May 2000 is part of our timetable as a full exam administration. We also don't know yet what the multiple choice versus essay combinations will be for these courses. We expect Course 1 to be a three-hour multiple choice exam. We don't necessarily know how many times per year each one will be given. I suspect that much like the current situation, the early exams would tend to be given two times a year and be all multiple choice. Later exams will be given once a year and be all essay. Deciding which ones would be given and how often they would be given is something we're going to be working on in the next few months. I suspect somewhere in the middle there will be a combination of multiple choice and essay questions in single exams like we had in the past.

Some miscellaneous issues. We have worked hard throughout this process with the CAS, and hoped to come up with four jointly sponsored courses. We're down to just Courses 1 and 2 at this point. On a positive side, I figured out that the percentage of the ASA syllabus that is jointly sponsored with the CAS is going to be a bit higher than it is today. So that's at least some conciliation. We fell far short of our intentions here, and while it's likely that we'll only co-sponsor Courses 1 and 2 beginning in the year 2000, it's not to say that we can't reach some agreement with the CAS later, and be able to accomplish what we think would be beneficial, particularly to the younger entrants into our profession.

The ASA comes after six courses. That's comparable to where it is now, and those six exams equate roughly to the 300 credits we're requiring for that now. The ASA will not be taken away from anybody who has it today. Even if your credits don't convert to all of the six exams that are required for the ASA under the new system, if you're an ASA, you'll be able to keep the ASA designation.

The FAC will look very much like it does today. We haven't planned any changes there. There is an FAC committee and they're always looking at ways to improve it, so there may be evolutionary changes as we go along. I'd expect it to be very much the same.

The education and examination management committee is currently studying the issue of an ASA professionalism course that would be mandatory for entry into the SOA. It's too early to say how that will turn out; it's just in the investigation phase at this point. It's not part of our board task force effort. It's very possible that if it did go ahead, the introduction could come at the same time or near the same time as the new syllabus—in the year 2000.

And finally, this is the timetable that appeared in the August 1996 report to membership and to exam candidates. Once the final conversion rules come out July 1, 1997, Tasks 6, 7, and 8 will all have been accomplished: course specifications, conversion rules, PD rules, the Board approval, and publication to members and candidates. The rest of the timetable is still our best estimate. Task 9, publication of a preliminary syllabus, is to be completed by May 1998. By August 1999, we'd have educational materials ready. Task 11, publishing a professional development catalog, is scheduled for completion by September 1999. Task 12, publication of a catalog detailing basic and advance courses should be done by November 1999. In January 2000 PD courses would be offered by the SOA. Finally, the first exam should be administered in May 2000, if not February 2000. This is subject to change, but we are clearly still on track for an introduction in the year 2000.

Just one other comment and that's to thank an awful lot of people that are responsible for the progress we've made. Probably number one would be Cecil Bykerk who has chaired this task force since its inception. The design team is doing the lion's share of the work now, and Jeff Beckley is responsible for coordinating all their efforts. We've got dozens of people working on the various working groups for each of the courses. We'd also like to thank the staff of the SOA, especially Marta Holmberg and Jeff Allen, and finally, our students. We got a lot of feedback from our reports to the membership and candidates in the summer 1995 and summer 1996. They have influenced the design of this system. We appreciate all of your help and we'll keep working to make this a good system.

**Mr. Timothy W. Verschelden:** I was not paying attention to the conversion rules. For those with an Associateship, under all the old rules, is all the credit applicable? Or are there very likely to be unassigned credits. I had my Associateship under the old rules. Are all my credits very likely used in Courses 1–4?

**Mr. Hepokoski:** I haven't looked at it from that standpoint so I'm not sure that I could say yes. My impression is, as long as you've taken the required courses, I think you're fine. If you've done a lot of playing around with the optional courses, then that may not be true. I guess I can't answer that.

**Mr. Brown:** I'm trying to figure out which way you're coming at it. Peter said you're going to have enough. I thought I heard you ask however, how many would you have leftover?

**Mr. Verschelden:** Am I likely to have any credits leftover?

**Mr. Hepokoski:** I think you're guaranteed to have some undefined credits. They can be applied to your PD requirements on the assumption that there's no better way to do it. They can be applied.

**Mr. Brett E. Morris:** I'd just like to followup on that. I looked at the conversion rules in detail. If you work it out, I think you'll find that you really only need 435 credits to get your FSA. I could probably accomplish that by November 1998. So should I go ahead and take the extra 15 credits for my FSA now, or just wait until January 2000? I guess I'd like to see you go ahead and make the conversion rules start immediately so, as soon as I get 435 credits I could get the FSA.

**Mr. Brown:** We've had that comment at the last three sessions that we've done. We knew that as soon as the numbers were out, you'd have them figured out. You've identified your options as they now exist. You can continue to write to get your Fellowship under the old system or you wait for what we believe is a fairly

liberal conversion and get your Fellowship under the new conversion. But are we going to give you a liberal Fellowship before the conversion (the way I would word it)? My own personal inclination is we will not, but I know that the Board is still open to having discussion on that. Pete is on the Board, and maybe I could throw this question to him.

**Mr. Hepokoski:** We've not made a final determination yet. That has not been one of our priority issues. I know it's important to some people, but we would anticipate getting that result within the next year or hopefully sooner.

**From the Floor:** My question is regarding Course 6. You said it was Courses 220 and 230 combined. What if you have 220 but you don't have 230? How do you go about getting that course if you're subject to the conversion?

**Mr. Brown:** Course 220 is essential because Course 6 credit can be assigned for Course 220 with 25 unassigned credits. If you're going to go after only one of those two, make sure it's Course 220. Are you saying you already have 220 but you don't have 230 or the unassigned credits?

**From the Floor:** Yes.

**Mr. Brown:** There are bound to be some painful situations. Our stand at the moment is that there will be a conversion and there will be a conversion date, and there will be conversion rules. Let the chips fall where they may. The person you have described would have to write all of the new Course 6. Keep in mind that it's not dissimilar to a student who has written an actuarial exam and received a 5. They don't start from scratch the next time. They start with a base of knowledge and a lot of study already behind them. But situations will arise. If we opened the door to every possible combination, I think we would be into an endless administrative situation. We've tried to be liberal and in this instance, if you have Course 220 and 25 unassigned credits, you can get the new Course 6. Now with three years advance notice, hopefully you can arrange things so that you don't miss the core.

**Mr. Hepokoski:** In that situation you would get some unassigned credits for Course 220 to count towards PD credits.

**Mr. Klugman:** You might tell by my comment that I already have finished my examinations, and I'm apparently glad that I only have to go through a transition rather than a conversion. I too share your disappointment about the lack of common exams. You mentioned middle ground, and I guess I'm looking to you, as the leaders of the SOA in these events, to comment on your commitment to as of a

much common syllabus as can be arranged. That is, we know that our exams 3 and 4 and the CAS exams 3 and 4, although they will be different, will overlap considerably. To what extent are we committed to finding a common syllabus so that, to the largest extent possible, our students can study for both sets of exams?

**Mr. Brown:** That's an excellent point, I'm glad you brought that up. The syllabus will be very common. In fact, I would think that when students start to get the two sets of syllabus from the two bodies, they're going to scratch their heads and say, why didn't you finish this off? If there is an 80% overlap, why did the 20% have to create this difference? For example, the difference in Course 3 will be a 20% difference between having a test of background of classical statistics in the CSA exam and 20% more life contingencies on the SOA exam. That means that a student in an undergraduate program can take one program and probably wait until almost the night before to decide which exam to write. He or she would certainly have to study more life contingencies to write the Society exam, but if their statistics are sound enough to write the SOA Course 3, they could come awfully close to writing the CAS Course 3. Course 4 will have more CAS material in some applicable areas. For example, there will be more credibility versus a little bit more on the survivorship distributions. It will be again about 80% overlap. In some sense that's good news to someone like you. You can probably teach the courses you want to teach and, with a little bit of extra work, you can work with whichever syllabus you want, as opposed to having me design a wildly different set of courses for the two organizations.

**Mr. Hepokoski:** I would like to draw the distinction though between a common set of topics and an identical syllabus in the sense that both organizations could choose to test a particular a topic, but could still choose different source material for those two topics. I'd very much like to see a degree of commitment to still work together to choose common source material.

**Mr. Brown:** That is also my hope. I would also suggest to you that perhaps the Society will be moving to multiple resource material. For example, rather than there being a single text for everything beyond calculus, for the compound interest section, the Broverman book will take equal standing with the Kellison book and maybe the Parmenter book will take equal standing with the Broverman and Kellison books. And wherever there is an equivalence of study material there won't be one model approach to how you get the knowledge. It will be the knowledge we're concerned about rather than how you got there. That may allow you to be more flexible.

**Mr. Kyle J. Schaffer:** I have a follow-up question about the conversion rules. I haven't seen the rules before, so maybe this isn't even a valid point. It seems to me

that, a student, in looking at his or her conversion, could plan the strategy quite differently to get different exams. If so, is it going to be the responsibility of the student to somehow submit the form saying how they want the conversion rules to apply or is that going to be something done by the Society?

**Mr. Hepokoski:** Our current expectation is that sometime in 1998, as early in the year as possible, we would send each current candidate a listing of what they have at that point and how it converts. And if there's any disagreement or misunderstandings, that would give plenty of time for resolution. Then the exams during 1999 could be maximized for each candidate.

**Mr. Brown:** I don't think there's much flexibility once you have your credits. The rules are that there's certain cross reference exams that are one to one. Then undefined credits have to be applied bottom up, except Course 8 before Course 7. So if you have enough to get your Course 8 specialty you get Course 8, and leave Course 7. Those will be the rules that will be applied. If you write in and say, you want to apply an exam a different way, there really won't be much room for that.

**From the Floor:** Well, for example, for Course 6 you need 220 and 25 unassigned credits. You couldn't use 200 as unassigned credits to fulfill Course 6.

**Mr. Brown:** Right. You certainly won't be able to do that. If you had some unassigned credits, the question that could be asked is, could you apply it to Course 2 or Course 6? It's going to have to be applied bottom up. For example, I've got numerical methods and ten unassigned credits, do I get to choose whether I buy something towards Course 2, 4, or 6? The answer is no. It gets applied from the bottom up except for Course 8 and before Course 7.

**Mr. Schaffer:** If I had exam 200 and exam 220 only, I wouldn't be able to get either course 5 or course 6?

**Mr. Brown:** Do you have 210?

**From the Floor:** No, I don't have 210 or 230.

**Mr. Brown:** Well then you're definitely not going to get Course 5, but you will get unassigned credits for 200, which can then be applied bottom up. And it might end up buying you the rest of Course 6.

**From the Floor:** So there really isn't any manipulation as far as strategy is concerned.

**Mr. Brown:** I think a computer should be able to do the conversion. If that's the answer you want.

**Mr. Hepokoski:** I tried to do that earlier this week. I looked at about 50–60 different combinations somewhat randomly generated. Just to see if there were any interpretations coming into place. The process is almost arbitrage free, and in every case that I found, and obviously there were some wild ones, there was no question of judgment involved. The rules seemed to work so that it was clear how credits would be given in the way it has been outlined. It was clear how the credits had to be applied.

**From the Floor:** If I'm to write Course 8 in the states and then I decide to come back to Canada, what happens to me? Do I have to rewrite for CAS? I'm talking about the pension exam.

**Mr. Brown:** It would be pretty much the same as today. That question could be asked about the Fellowship Canadian specialty, and you would want to make sure you knew what the Canadian Institute was going to require of you. So if you're going to end up being a pension actuary, signing pension certificates in Canada, then you better know what the Canadian Institute requires. If you believe you're temporarily in the states and plan to be in Canada permanently then you may want to write Course 8 Canadian. But I don't think this will be any different in the future than it is today. You would still have those same questions, and you would want to make sure you knew the answers to those questions before you wrote those exams from the Canadian Institute of Actuaries (CIA).

**Mr. Michael J. Villa:** I would like to discuss the exams that require PD and the one part that requires an intensive seminar. If I remember correctly, you said it would take five to seven trips to get all your PD credits, plus the one trip for your intensive seminar. You're talking about 6–8 trips and a trip is about \$1,000, plus you're talking about some expensive exams here.

**Mr. Brown:** You don't have to do your PD in North America, and only half of the PD has to be accredited by the SOA. So that's down to 25 hours. You could do the other 25 hours in Inner Mongolia if your supervisor said that was the best thing for you to do, and signed off on it.

Further you can get those 25 SOA credits by, for example, writing one more exam which should be offered locally. Or, for somebody outside of North America, write to the Society about your plan and ask whether you can do these things. I would also suggest that before much time goes by, there's going to be activities of the

Hong Kong Actuaries Club that will be accredited by the SOA, just as the CIA meeting will be accredited by the SOA.

**Mr. Villa:** I guess I was speaking as somebody from North America having to travel to get my PD credits.

**Mr. Brown:** Well, you only have to get 25 hours that way. If you don't want to travel, then write an exam or write a Fellowship paper or do one of the other options.

**Mr. Mark Swanson:** This computer credit-conversion print out is going to come sometime in 1998?

**Mr. Hepokoski:** Our current expectation is something would come out in early 1999 and show how the credits earned through the November 1998 exams would convert.

**From the Floor:** Exam 210 was reduced in credits in the past few years. For those who received 30 credits, will those five extra credits become unassigned?

**From the Floor:** An little more interesting question. As far as the approaching conversion goes, 50% of the PD has to be SOA approved. The first list of SOA approved PD comes out in 2000.

**Mr. Brown:** It's meant to come out sooner. The timetable said that there would be some rounds of credited PD in 1999.

**From the Floor:** The PD has to be no more than two years old to count towards the final exam, which means that if you wanted to sit around and wait like the other gentlemen was saying, you could wait and get the 435 credits, but you can't start taking PD until 1999?

**Mr. Brown:** That's correct.

**From the Floor:** The credits that don't fit into one of the previous uses ended up counting towards PD. Are those credits part of the SOA approved 25?

**Mr. Brown:** Well, there's no death to them. They live forever. So if you understand they live forever, does it matter?

**From the Floor:** Well it matters to me because I live in Switzerland and so I'm thinking about how many trips I would have to make to get PD. If the extra credits



that live forever count towards the 25 and are SOA approved credits, that relieves me of some complications.

**Mr. Brown:** I'm not sure if we've clarified that or if we addressed that specific angle. We need to do that.

**From the Floor:** You said, if you don't want to travel, take an exam. It seems consistent to me if you have leftover exam credits, those ought to count towards the exam half of the requirement.

**Mr. Brown:** Yes that does. I think it will matter though whether you live in the Italian, German, or French part of Switzerland. There will be three sets of rules.

**From the Floor:** That's what I was afraid of. That would be typically Swiss.

**Mr. Brown:** So you may have to move.

**From the Floor:** Does the advisor have to be an FSA or is it encouraged he or she be an FSA?

**Mr. Brown:** Encouraged. We know already there will be situations where that will be impossible and while we haven't put pen to paper on this, I can't see the Society not allowing a recognized actuary in your jurisdiction to be your supervisor.

**From the Floor:** But it should be an actuary?

**Mr. Brown:** Actually Peter just pointed out the phrase to me: "or other person acceptable to the education and examination committee." So, in fact, it is in writing. So you'll probably have to send a note saying, I don't have an FSA in town and Hans Buhlman will probably do.

**From the Floor:** So if work is in a foreign language, a language other than English or French, as long as the advisor finds the work to be sufficient, that's OK with the SOA?

**Mr. Brown:** Oh, no question, there's no English requirement in that.

**Mr. Hepokoski:** I might just clarify one thing with that last comment and that is, the technical request we have of the advisor is that they review the plan with the candidate. We're not asking for that advisor's express approval of the plan. We're expecting a student, as a good faith effort in getting any advice, to prepare a plan that the advisor would deem appropriate. But we have some concern about what it

might mean, from a legal standpoint, if an advisor is asked to actually approve the plan.

**From the Floor:** That's actually part of my question. You mentioned that someone had to write a report to explain the benefits received from the PD electives. Is that the advisor or the candidate?

**Mr. Hepokoski:** The candidate would write the report.

**From the Floor:** Is it then possible that you could have a bum advisor who told you to take some course that he felt was worthwhile, but then you write this report and somehow it gets disapproved because it was not a worthwhile course?

**Mr. Brown:** That's a good question. I think it's possible. One of the things that we've talked about is the advisor. We were throwing around words like mentor, but this is an advisor. They don't pass you or fail you. Now in a situation where you and your advisor get together and legitimately try to pick a good seminar series, or a good college course at the local campus, and it turns out to be a dud, ethically, you're going to have to go back and do a few more hours. But if what you've legitimately done was what was asked of you, and your advisor says, "No it's not good enough, you fail." We don't foresee that situation. Your advisor is not supposed to be in a position of passing you or failing you. One of the other things we're trying to achieve through this process is some communication. I'm hoping that in many offices, as you go through your PD, one of the assignments will be to come back and do a communication, both written and oral, of what you did, what you learned, and how it benefited you.

Communication skills are something that we don't think you can test in a correspondence mode. We tried to think up some multiple choice questions but it didn't work. We'd like to see more of it. We really think this is a skill area where we're lacking and where we're weak.

**From the Floor:** And there are no other requirements for the advisor, other than he or she must be an actuary for the advisor. Once you've passed your PD and gone to the FAC, then could you immediately become an advisor?

**Mr. Brown:** Yes, you might be a very good advisor. The other thing we have talked about because we've had some questions about it, is what if I'm in the health part of the company and halfway through my PD, they move me to the individual annuities department. We don't think you have to start again or change your advisor. I mean this is meant to be an advisor, this is meant to be a relationship that promotes you,

promotes your communication skills, and gets you in touch with the professional. We're not trying to hang a whole lot of strings around us.

**Mr. Hepokoski:** Let me just add one comment related to a question a little while back, and that was with respect to the PD catalog. That timetable that was up there indicates that we are shooting for a September 1999 release of that catalog. The courses would first be available beginning in 2000.

**Mr. Schaffer:** Is lengthening or shortening the travel time of the exams either an explicit decision-making factor and, if not, have you at least given consideration to whether you expect the new program to take longer or shorter?

**Mr. Brown:** It was one of the very first goals that was expressed in the board task force. Our philosophy was that we thought the time to Fellowship was lengthening and lengthening, and we really couldn't let that go on. We spent a great deal of time talking philosophically about the difficulty some people are going to have with a small number of very large exams because many students are not able to study 300 hours for an exam. They're raising small children, and they have career situations for which it has been good to have the flexible syllabus. Maybe someone would want to try only ten credits.

However, travel time was a very big concern, not only for the existing candidates who are already wed to the idea of becoming Fellows of the Society, but also in terms of recruiting for the profession. We don't want to go into a university and talk about what a wonderful career being an actuary is. It gets ranked in the top five in the *Jobs Almanac* every year, and it only takes you 37 years to become an actuary. You can become a CFA in a much shorter period of time and there are many other things that you can do with the same skill set that don't take as long. Having said all of that, I believe the travel time will shorten. I'm not so sure that the average age of the attainment of Fellowship will change all that much because you're going to be hard pressed to have two exams coming out of college. It may be that while travel time shortens significantly, the average age of attainment of Fellowship may not change nearly so much. We still think we were on a road that was not serving the student or the profession—the travel time was just getting way too long.

**Mr. Hepokoski:** I would echo Rob's comments. I think the two major disappointments with the new system that I have, and I think most of the people working on it have, is one: the level of joint sponsorship we're able to negotiate with the CAS; the other is the issue of not having smaller courses for those people for whom that was the perfect fit. We did say, by the way, in our last report to the membership, that the majority of our reviewers noted the candidates have been

attempting fewer and fewer credits under the flexible education system. The new system is likely to reduce the travel time to becoming an FSA.

**Mr. Timothy Grusenmeyer:** I know you mentioned Course 7, the intensive seminar. The length is currently somewhat up in the air, but do you have a ballpark?

**Mr. Brown:** We have hopes. Personally I don't want it to be much longer than 3.5 days. To keep it that short, we're going to have to mail out case studies and CD ROMs, so the student is going to have to come fairly well prepared. If we want to start them on it cold, it can't be 3.5 days. I have a personal difficulty with us asking for more time away from work and family. I mean we're really talking 4.5 days, because you're going to have to travel. So that's our hope, but we're a long way away from dotting that i and crossing that t, so don't remind me of what I just said if it turns out to be a 4- or 4.5-day seminar.

**From the Floor:** Now that all the criticism has been out, and I certainly heard a lot of it, I'd like to say that I'm very thankful to you guys for changing the system. It had to be done. You put a lot of work into this, and I personally think it's great. And I think I speak for most students who are still at the university level. The transition or conversion is fair for us anyway. You did a good job.

**Mr. Brown:** It was just about a year ago when I was at the Society spring meeting in Colorado Springs. We had some hot sessions with some actuarial clubs. Peter and I used to go into rooms and make sure we knew where the exit door was. However, the first person that got up in Colorado Springs went to the microphone and said, "I am really upset." And I thought oh boy, here we go. He said, "I wish this had been the syllabus that I could have studied under." I let out a big "whew."

**From the Floor:** I've obtained my Associate under the current system. Does that translate to Course 1-4?

**Mr. Brown:** I'm pretty sure that you'll get 1-4 and have some undefined credits leftover. I hesitate because there could be something unique that I can't put through my system in that length of time. But I'd be surprised if you don't have credit for 1-4 plus have some undefined credits leftover.

**Mr. Hepokoski:** An ASA under the current requirements in effect through July 1995 earns credit for Courses 1-4 and 25 unassigned credits. The ASA under the new requirements would get Courses 1-6 and 25 unassigned credits.

**From the Floor:** Under the new rules, if I have 50 unassigned credits, can it be used to satisfy Course 7 before Course 6?

**Mr. Brown:** Not the way the rules are written at the moment.

**From the Floor:** So, if I have 50 unassigned credits then I wouldn't get Course 7, but I would get half of Course 6?

**Mr. Brown:** You would finish up Course 6 and you would have credits toward PD. But you would have to go to the intensive seminar.

**Mr. Hepokoski:** If you don't have Course 220, you couldn't get credit for Course 6, because 220 is required. Then 25 unassigned credits would make that up. So if you don't have 220, you can apply it to 7. If you have 220, you'd have to use 25 of the credits to finish up 6.

**From the Floor:** So if I don't have 220 and if I don't have 230 and I'm sitting on 50 unassigned credits, should I write 220 now? If I don't have 220 and 230 can I satisfy Course 7 first?

**Mr. Hepokoski:** If those same credits could not be used for a lower level course, yes, you could use it for Course 7.

**From the Floor:** Could the credits be used for part of Course 6?

**Mr. Hepokoski:** If you don't have Course 220, you cannot have Course 6 under the conversion rules. No matter what.

**From the Floor:** So go ahead and fill Course 7.

**Mr. Hepokoski:** Right.

**Mr. Brown:** The very first rule is continue to write exams and pass them. That still remains an excellent strategy. When you get closer to the changeover (and you still have 2.5 years), sit down and develop your strategy. If you are missing 230 and have some unassigned credits, determine what your best strategy is. At this stage, I think your best bet is to write as many credits as you can and pass as many as you can, and just continue to spend your entire life in the basement. Forget about the fact that it's warm outside and all those other lovely things.