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CURRENT EDUCATION ISSUES FOR ACTUARIES

Moderator: GODFREY PERROTT
Panelists: DANIEL J. FITZGERALD
 MARTA L. HOLMBERG*
Recorder: GODFREY PERROTT

- o The session will focus on topics of current interest relative to the education and examination system.

MR. GODFREY PERROTT: This is the open forum on the Education and Examination (E&E) system. The session will consist of a formal presentation followed by a question-and-answer session. The panel for the formal presentation comprises Dr. Marta Holmberg, the SOA Education Executive who is responsible for the Society Education staff, Daniel Fitzgerald, the former Education Chairperson who oversaw the development of the flexible education system (FES) syllabus before he retired last March, and myself. I am Godfrey Perrott, the incoming General Chairperson of the E&E Committee.

After the formal presentation, Dan will be replaced by the current E&E Chairpeople of the E&E Committee. This session is designed primarily for ASAs although the bulk of the session will be an open question-and-answer format. Initially, Marta, myself and Dan are going to make three presentations. Marta is going to talk about what the pass rates have been under FES for the ASA examinations and what implications you might draw from that. I'm going to talk about the Fellowship Admissions Course, what it is, who it affects, when it will happen; and Dan is going to talk about how the education material has been upgraded as a result of FES. Dan is the past Education Chairperson who had responsibility for upgrading the FSA education material as we started into FES.

DR. MARTA L. HOLMBERG: We have three Associateship FES sessions under our belts and that provides us with an experience base. We can begin to look at what has happened with the ASA FES and consider the effect on Fellowship FES which starts with the November examination session. I stress the words *begin to look at* because this is an ongoing process of analysis and evaluation; we're not entirely sure exactly what will happen in the future.

Traditionally, in the pre-FES environment, we had fairly stable pass rates; that led to the misperception that there were magic passing percentages established to let through the right number of candidates. It was rather the case that we had a stable population of candidates taking those examinations with similar percentages of them demonstrating proficiency.

We tested this concretely about three years ago when there was concern that with the growing numbers of new (Part 1) Course 100 candidates there might be

* Dr. Holmberg, not a member of the Society, is its Education Executive.

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an erosion in the standards for passing those first examinations. We looked very carefully at all of the statistics that we collected on the difficulty of the examinations and the performance of the candidates. We looked at things like benchmark questions, comparing how different populations in exam sessions did on questions that were highly comparable and concluded that there is no decline in the quality of the candidate population.

It has been clear to people in the E&E system that if candidates were demonstrating proficiency at the same rates that we saw in the pre-FES environment, travel time under FES would lengthen. For example, if you had candidates writing the four courses that formerly were Part 5 and they had a 40% chance of passing each of those, their chance of passing all four would be extremely low. So let's see how ASA FES has turned out compared to those stable pass rates. Traditionally, Parts 3 and 5 had an effective pass rate of about 40%. The pass rate for Part 4 with the subject of life contingencies was somewhat lower at about 35%.

Table 1 shows that under FES, the effective pass rate for the former Part 3 subjects has varied from 40-57%. For the former Part 5 courses, the pass rate has ranged from 44-66%.

TABLE 1
Effective Pass Rates

	Pre-FES	FES		
		5/87	11/87	5/88
Part 3	40%	-	-	-
Course 120	-	40%	42%	57%
Course 130	-	44	43	44
Course 135	-	42	45	52
Part 4	35%	-	-	-
Course 140	-	37	47	47
Course 150	-	37	39	40
Part 5	40%	-	-	-
Course 151	-	47	44	48
Course 160	-	47	66	48
Course 162	-	48	47	59
Course 165	-	52	52	52
New ASAs	260	88	282	321

FROM THE FLOOR: Can you define what your numerator and what your denominator are for those numbers? What are effective candidates?

DR. HOLMBERG: Effective means that candidates attained at least half the score necessary to pass; candidates who scored less than half the pass mark are excluded from the denominator. The assumption is that those candidates were not seriously prepared for the examination.

FROM THE FLOOR: Are you looking at each part individually rather than where people took all the courses that made up Part 4 or Part 5? How many people took all the necessary parts and passed all the necessary parts at one time?

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DR. HOLMBERG: We've looked at some subgroupings like that. I don't have complete data at this point. It appears to be lower than 40%.

FROM THE FLOOR: But doesn't that mean we should be looking at that?

DR. HOLMBERG: We should; I will get to this later, if I may proceed.

Similarly on Course 150 (Actuarial Mathematics), the effective pass rate has moved up to 40% from 35%. It's important to stress that this does not represent any lowering of passing standards. It is rather that these effective candidates are demonstrating proficiency on those subjects at a higher rate.

We also looked at the overall success rate under Associateship FES. (Overall success rate is the total credits passed divided by the total credits attempted for all students in an examination session.) Our hypothesis to be tested is: "if candidates write the same number of credits that would have constituted a pre-FES Associateship examination (40-50 per candidate), then the overall success rate should be comparable to pre-FES rates. If they write significantly more credits we expect the overall success rate to drop; if they write considerably fewer credits, we expect the overall success rate to increase." These results are shown in Table 2. The expected column contains the hypothetical overall success rate as compared to the actual results. We have confined this study to "effective FES candidates." Those are candidates who have passed at least 40 credits over the last three Associateship FES sessions (see Table 2).

There is only one level of credit attempted for which the actual success rate is less than that expected under our hypothesis. That was candidates writing only ten credits (58% versus 75%). Perhaps that isn't too surprising; the people who wrote only ten credits in that first ASA FES session were probably marginal candidates; the typical candidate at that time attempted a number of credits comparable to a pre-FES examination. Candidates for all other levels of credit attempted either met or exceeded our expectations.

I'd like to make a few general points about FES that are relevant before getting into the implications that this experience has for FSA FES. FES allows a candidate to tailor his or her writing of exams to his/her professional and personal demands. It allows the candidate to write more or fewer credits depending on what other demands there are on him/her. We have received several comments from candidates who had abandoned the Fellowship system of examinations and are excited about the possibility of coming back in. They feel they can write *thirty-credit examinations within the other demands on their time and energy*. FES also allows candidates to make choices that match their interests and their areas of professional practice. And FES further allows the fast-track candidate to add some credits to a base of fifty credits per examination session rather than having to take a large jump of another fifty credits to try to move through more quickly.

Now I'd like to report on what we can expect to find for FSA FES. First, we are going to see *more candidates who are taking a flyer on a short examination, that is, writing an exam for which they're not really prepared*. There are several reasons for this such as company policies about study time, or deciding to neglect or abandon one course to maximize the chances for success on other course examinations taken that session. There are probably other reasons. This affects pass rates; as was the case with ASA FES, we can't expect to see stable pass rates. The underlying candidate populations are not going to be as

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TABLE 2

Percent of Credit Earned Compared to Credit Attempted
Candidates with Credit for at Least Parts 100 & 110 as of January 1987

Performance on May 1987 Exams
All Candidates Earning \geq 40 Credits Over 3 Exam Sessions
(FSA Credits Included)

<u>Credits Attempted</u>	<u>Actual Overall Success Rate</u>	<u>Expected</u>
10	.58	.75
15	.73	.70
20	.66	.60
21-50	.52	.40
51-65	.58	.35
66-100	.47	.30
> 100	.38	.30
Total	.52	.41

Performance on May 1988 Exams
All Candidates with FSA Credits and \geq 40 Credits Earned
Over 3 Exam Sessions

<u>Credits Attempted</u>	<u>Actual Overall Success Rate</u>	<u>Expected</u>
10	.71	.75
15	.93	.70
20	.69	.60
21-50	.61	.40
51-65	.56	.35
66-100	.55	.30
> 100	.30	.30
Total	.60	.42

stable, at least for some time. And the goal of the pass mark is to pass every candidate who has demonstrated proficiency.

We're also going to see changes in exam strategies. Under the first ASA FES administration candidates wrote what was very close (in both total credits attempted and subject matter) to the pre-FES examinations. Later administrations diverged from that pattern. The population that has experienced ASA FES is likely to adapt most readily to FSA FES; they have already mapped out strategies similar to those that they developed to see them through ASA FES.

The examination candidates are quite resilient. Those who have experienced disappointments under ASA FES are rebounding and making reasonable progress through the system.

Further, we can expect some drop in the number of new Fellows the first FSA FES administration. (The first ASA FES session, the number of new ASAs was 88 as opposed to a typical pre-FES number of 250.)

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Frankly, we had not expected that sharp a drop in the number of new Associates. It is clear that the independence of pass marks in the various courses caused some of that disappointment, but the change in the format of the Course 150 examination (where the exam went from being entirely multiple choice to being a combination multiple-choice and written-answer examination) which occurred at the same time was a traumatic experience for candidates. Again you see a clear rebound effect. The next two sessions under ASA FES we saw 280 and 320 new Associates. I hope we get to see the same under FSA FES.

ASA FES has not been clear sailing and I'm sure that FSA FES will offer some new challenges to both the E&E Committee and to the examination candidates. As with all major changes in the examination system there has been some disruption and a slight slowing of progress to Associateship for some candidates. But FES provides a lot of educational opportunities for candidates giving them a choice of courses, giving them an opportunity to take advantage of future exam methods (FEM) options as those are put into place, eliminating the need for future transitions, giving strong candidates more leeway to move through the system somewhat more quickly and ensuring that candidates have truly mastered all the courses they have passed. All of this without lowering the high SOA standards for passing the examinations. So perhaps one could, but who should ask for anything more?

MR. PERROTT: I said in the beginning that I'm going to talk about the Fellowship Admissions Course (FAC); that is my primary topic, but I will also mention Research Papers since that also affects ASAs.

The FAC is one of the FEM proposals that has been approved by the Board and it is currently being implemented. Candidates who have not completed their last Fellowship exam when the pass list comes out early in January of 1990 will have to take the FAC as the final requirement to get their FSAs. The people who pass their last Fellowship exams in May of 1990, assuming that no one has only Course 100 or 110 left and passes it in February (it's been known to happen but it's fairly rare), will have to complete the FAC in order to get their FSAs.

The first FAC will be administered in August or September of 1990. There will be two sessions per year and there will be two courses for each session (probably one in the East and one in the Midwest or West). In other words, there will be a total of four courses during the year, two of them occurring in August or September and two most likely in March since February would not be the ideal month to have a seminar for new FSAs. About every fourth or fifth course will be in Canada. There will be no requirement that candidates from a particular locality attend a particular course. You won't have to attend the course immediately after you complete all of the other requirements although it's likely that people will.

My statements regarding the FAC are tentative. Right now work is going on to finalize the course and it's possible that the final product will be slightly different. In terms of overall characteristics this is an accurate description.

The course will be in a format of about a two-day seminar. As I said earlier, it will be the final requirement to obtain your FSA. Everyone will have to take the course. We feel that the FSA is primarily a North American designation, that our task is to accommodate North American students and that foreigners who wish to become FSAs will need to arrange to take the course in North America. All other requirements to obtain the FSA will be prerequisites so that the only

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people who will be permitted to take the course are people who will be Fellows when they complete it.

The course is not intended to be a hurdle. It will be possible to fail it but only if you work at it. Anyone who comes to the course and participates can expect to pass.

The content of the course will be split evenly between professional ethics and integration of material. The type of teaching methods that will be used by the course will almost certainly include case studies, and it may include computer simulations. The course may include unstructured problems working with live data, for example, windshield appraisals where you try to put a value on a company with only annual statement data to work from. At the end of the course everyone will be presented with his/her FSA, assuming he/she participated.

Why are we doing this? Why are we putting what appears to be an additional requirement on new FSAs? There are two reasons and they interact with the two portions of the course. What FES has institutionalized is something that anyone who has taken the exams or looked at them has known for a long time. The questions on the exams are typically single-topic questions. They can be answered from one reference source. The E&E Committee has struggled to put multiple-topic questions on the exam over many years, but it's almost impossible to get people to draft such questions and they are very difficult to grade.

Multiple-topic unstructured questions do not fit at all well into the examination system. Ethics and professional standards are ill-suited to self-study and examination. Anyone who has been involved in these realizes that to get an understanding of what ethics means and how you differentiate between various shades of gray needs interaction and discussion which is handled better in a case study situation than an exam question situation. (Incidentally, at the moment there are a few questions on the examinations on professional standards. These questions normally correlate negatively with the pass rate. I'm not saying that we are passing unprofessional actuaries but I am saying that the understanding that people get of professional standards from self-study is that they just don't understand them.)

We need actuaries in today's environment who have a broad perspective and can deal with unstructured problems. The best way to guarantee that we don't have such people is to use an examination system which appeals totally to narrow focused thought on structured problems. The FAC, and particularly the integration of material part, is a start to try to introduce unstructured problems. Early in the development of FES we were concerned that if we broke the syllabus up, the system would produce FSAs who couldn't relate one piece of material to another. So we considered having a comprehensive exam as a final requirement. As we worked through it, we realized a comprehensive exam was impractical because it's very difficult to set a comprehensive exam when you have people who have studied different material. The approach of the FAC -- where it's a participative educational experience rather than a competitive examination experience -- is the right way to deal with this concern.

Another FEM proposal that affects anyone who's an ASA is the Research Paper option, if you care to take advantage of it. It is in place. If you are interested and feel that there is some way that you wish to contribute to actuarial thought you should contact Wayne Berney in the Society office.

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MR. DANIEL J. FITZGERALD: I will focus on the development of the Fellowship course material under the new FES. Since most of those in attendance here are either Associates or Fellows I won't discuss the Associateship syllabus.

When the Board of Governors approved implementation of the FES for Fellowship exams over two years ago, the Education Committee was faced with a real challenge. The new system would require more courses to accommodate the specialty tracks in Individual Life and Annuities, Group Benefits and Pensions. Additionally, Core courses would have to be expanded to cover new topics facing all practicing actuaries. And finally, further delineation would be required to provide distinctions between Canadian and U.S. topics in the areas of law, regulation and taxation. Yet, as most marketing types would tell you, a challenge should be viewed as an opportunity. For you see, we really did have before us a true opportunity to significantly improve the Fellowship syllabus, because the syllabus was in need of some very serious attention. We came under sharp criticism for not keeping the syllabus up to date, for not reflecting the state of the art of actuarial practice and for requiring all actuaries to study essentially the same material regardless of their field of work.

The Education Committee set out to seize this opportunity. The Education Committee organized along the same track specialties as FES with a Group Benefits Committee, a Pension Committee, an Individual Life and Annuity Committee and a Core Committee. The charge of each of these committees was to review in depth the current course of reading to determine its appropriateness under FES. The committees recruited practicing actuaries in each of these tracks. Their charge was to determine what was needed to be an effective, well-trained professional within that track. The committees found varying degrees of appropriateness in the current syllabus; the Pension syllabus needed the most improvement, followed closely by the Group Benefits syllabus and then the Individual Life and Annuity syllabus.

Let me begin with the Pension Track to give you some idea as to the improvements that have been made. Sixty-two percent of the material covered in the specialty pension courses is brand new material. We have replaced nearly two-thirds of the pension syllabus. There's now better separation of the Canadian and U.S. pension topics. There's better integration of the EA exams, and new elective courses have been developed to address current issues such as international pension issues, the actuary as an expert witness, executive compensation and deferred compensation.

There have also been significant improvements in the Group area beginning in the Core courses. There's a new introductory study note which serves as a comprehensive source on manual rates, reserving, renewal underwriting, experience rating and alternative funding.

There are new study notes on group life insurance pricing, pricing and underwriting group disability income coverages, reserve practices for group major medical, long-term disability and term products, and dental benefits pricing. The new material addresses current issues such as the impact of AIDS and inflation on group insurance pricing. These improvements provide a comprehensive perspective on the analysis of the pricing process that has not been available to prior generations of students.

The improvements in the course content of the Individual Life and Annuity Track may not be as obvious as in other tracks because they were inserted into the

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existing (pre-FES) syllabus as it was developed. Two notes that do deserve mention are an updated note on ordinary life insurance mortality and persistency tables and a new note on value-based financial statements. With respect to the first, we're now describing the 1975, 1980 Basic tables, the 1980 CSO/CET tables, smoker and non-smoker evaluation.

An important topic facing all actuaries is the topic of investment strategy. Gone are the days of "split your investments equally between bonds and mortgage loans and have enough cash on hand to cover the policy loans." Instead, actuaries are concerned about asset liability matching (C-3 risk). There's also a need to consider the default and depreciation risk (C-1) as well as volatility, liquidity and commitment risks. An introductory study note on the formulation of investment strategies for life insurance companies and pension plans has been developed in response to this need.

Our first administration of the FES for the Fellowship exams will be completed in a few weeks. We think that the quality and the scope of the material has been improved substantially. It's our expectation that the result will be a better trained and better educated new FSA. But our collective commitment to ensuring this result will only come from a continuing effort by the Education Committee and by you, the membership, that our syllabus and course of reading remain comprehensive and up to date.

MR. PERROTT: Before we move to a question-and-answer format I will replace Dan with the current Education and Examination Chairpeople. Neville Henderson is the incoming Examination Chairperson and Esther Milnes is the current Education Chairperson. We don't commit to answer your question at the forum. If we don't feel we can answer it correctly we'll get back to you in writing and it will appear in the *Record*.

DR. ALLAN BRENDER: I'd first like to congratulate you for getting all those people to write all those new study notes on time. I think they're excellent from what I've seen of them. I've always wanted to see a non-examinable but introductory study note saying what the course is about as well as the introductory study note which lists what's on the course. This introduction should say, "this is what we want you to get out of this course." There are times when the order in which one reads various pieces of material is quite relevant. I think the Casualty Actuarial Society (CAS) provides a paragraph or two in the catalog along those lines. I always thought that would be very helpful.

Dan mentioned current events. It's not clear to me now what the status of this current events question is under the new system. We knew that in Parts 9 and 10 there were going to be some explicit allocations of marks to something called current events. Is that going to be assumed in level 300, 400 or 500 courses?

MS. ESTHER H. MILNES: I'll comment on both of those. It is our intent to have a course overview note for every course and we had a few on the fall syllabus. There will be many more in the spring and we will be doing just what you suggested with all the courses.

We will try to tell students what order to study the material in or why something was selected to be on the course of reading if it's not obvious.

We aren't allocating any particular points to current issues as we were under Parts 9 and 10. The exception to that is in the Pension Track. Regulation

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enacted up to a certain specified date, given in the introductory study note, is subject to examination even if it's not listed in the catalog, at least for the EA exams and the comparable exams for Canadians covering regulation.

MR. PAUL A. CAMPBELL: I'd just like to clarify that last point that you made. Are you saying that (maybe I'm going beyond the scope here, but please correct me if I am) when I'm involved with a class of students who are studying for the later exams and I'm attempting to relate what is in those works to what's going on currently in the new issues that have come, that that's actually misguiding them as to what they should be focusing on?

MS. MILNES: No. On Parts 9 and 10, we had current issues which were topics not covered otherwise on the syllabus. We have always considered appropriate questions such as, "Here's a current situation. Apply what you know, what you have learned from the syllabus to this situation." These are valuable questions and we'll continue to ask those sorts of questions. An example might help. Suppose a brand new regulation on annuity valuation is passed in New York four weeks before the exam. Under former Parts 9 and 10, we could examine on that. We are not doing that under FES except for the pension EA exams and for the Canadian regulation exams where we are specifying a date up through which anything is fair game.

MR. DANIEL EDWARD WINSLOW: I feel one of the dramatic changes with the Associateship exams is a shift among the passers. Have you studied the top 20% and how they're doing over several sessions versus the borderline candidates as to whether there are any shifts occurring there?

DR. HOLMBERG: We are beginning to look at a lot of these things. We have waited until we had enough experience with FES to give meaningful results. It's a reasonable question, but at this moment we don't have enough hard data to examine this issue.

FROM THE FLOOR: Marta mentioned possible longer travel time for the Fellowship exams. Can you elaborate on that? I thought that was one of the things that we tried to avoid with FES?

MR. PERROTT: Certainly one of our objectives with FES has been not to lengthen the travel time. One of the purposes of this session is to try to make it clear that we are not grading on a curve. We are attempting to determine competence and set the pass mark based on demonstration of competence. What has been happening and what we're trying to discourage is a self-selection by the students towards longer travel time. Students appear to have been taking fewer credits under FES because of the misperception that we grade on a curve; that automatically produces a longer travel time. We're concerned about travel time. We're continuing to work on it and to try to think of ways to reduce it because it's a concern of virtually everyone.

FROM THE FLOOR: Concerning the FAC, could you go into a little bit more detail in terms of the kinds of subjects that might be covered? What the distribution of that material might be and what the current thinking is in terms of the logistics? You indicated that there might be four sessions. Are they going to be held over weekends? Have you gotten that far in terms of what these final logistics are?

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MR. PERROTT: Our current thinking is that the FAC would be on weekdays, not over weekends; to the extent necessary, the four different administrations as a totality would try to accommodate any particular religious preferences or religious prohibitions. Our plan is to have four per year, primarily based on size. We do not want the FAC to get much larger than 100 people because we want it to be small enough so that the potential new Fellows have an opportunity to get to know each other. We expect generally to have one administration in the East and one administration in the Midwest or West for each session.

The main subjects are professional ethics and integration of material. Beyond that, we are still working on fleshing out the details of what will be covered within those. We've had suggestions on both of them. Over the course of the next year, that will become much more clarified as the various committees working on it complete their work.

MR. STEPHEN H. FRANKEL: I'm one of the members of the committee who's looking into the logistics of the FAC. We are considering not having every session on weekdays. The fee for FAC could be as high as \$1,000 if it is self-supporting. Most fees will be paid by employers; if employers have to pay a fee as high as \$1,000, they may not want their employees to take the FAC on work time.

MR. ROBERT B. BROWN: I'm one of those who is still taking examinations; I hope some day to finish and maybe before this takes effect. I pay my own examination fees (being a university person) and I'm stunned.

MR. PERROTT: I think the point you should have listened to is that the Board is concerned about cost. We're currently directed to present a range of alternatives for how the FAC should be funded to them. And we haven't done that yet. I think discussion about cost is premature.

Mike McGuinness is here. He is the Vice President in charge of Education and apparently he wishes to speak.

MR. MICHAEL B. MCGUINNESS: On the matter of cost, it was discussed at the Board meeting on Sunday (October 23); the Education Policy Committee was directed by the Board to reexamine this issue and to make suggestions. And the question of people from universities who pay their own fees was definitely in the front of their minds when they were thinking about that. So, I just reiterate what Godfrey said, that it is very tentative.

MR. PERROTT: Thank you, Mike.

DR. BRENDER: Are we still planning to distinguish between U.S. and Canada to some extent or distinguish in the integration portion among different practices or major subject areas? What's going on?

MR. PERROTT: Our current thinking is that the course would not be separated either by U.S./Canadian or by area of specialty. However, the teaching of individual subjects, certainly on the integration of material, has to be split by specialty. Trying to get pension actuaries to do windshield appraisals of insurance companies is not very productive. Secondly, the area of professional ethics has a lot of common ground but it also may well have nation-specific content.

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MR. ROBERT P. DECARO: It's my understanding that the EAs now have a continuing education requirement and my question is, do we expect to have some sort of continuing education requirement for FSAs?

MR. PERROTT: That's a question we can't take. The domain of the E&E is only qualifying education. There is a separate continuing education committee and I'll pass it onto them. I don't know of any such intent, but it's out of my sphere.

MS. ALTHEA D. BOUDREAUX*: I spend a lot of time talking to people at the ASA level and below. I have found that under FES, people are now trying to take three exams at once -- studying for two and just trying out the third one. Consequently, they're not passing it. A lot of corporations are saying, we judge our people that we hire by their pass rate and how many times they have to sit. Is there anything that you can do to recommend to people not to try this?

MR. PERROTT: It's not obvious to me that that's something that we can do much about or that it's changed under FES. I think that you can do more than we can to spread that word.

MR. W. CHANDLER LINCOLN III: I'd like to say something about the Part 3 examination in relation to that. The Part 3 exam seems now to have turned into a killer. Before, people were passing the first three exams fairly routinely and it wasn't until Part 4 that they were getting shot. Now with Part 3, I think what people are doing is signing up for all three course exams with the intent of studying for them and passing them. But when it gets down to two weeks before the exam, they realize that, "Well, I'm going to pass two of them but I'm not too sure about that third one. I want to make sure that I get at least two exams so what I'm going to do is I'm going to concentrate on those two exams, and the third one I'm going to let go and try again some other time." So I think that's part of the problem and I think any time that you make a system flexible that probably will happen. I'm not sure that increased travel time is bad if it results in better knowledge. And I think that's one thing that might be happening.

MR. JOHN W. RUFFINI: And I'd just like to echo that response. With the people who are working for me, the first time they'll take four exams and get a couple of 5s, a 4 and a 3 and then say, "What did I gain?" Then they'll take maybe one or two and hopefully pass that. The structure is forcing them to do that. We've only been doing this for a short while, but how do we get people to change their minds about doing that? It's something that has to be addressed because longer travel time is not desirable. You're going to lose good people.

MR. PERROTT: Longer travel time in general is a detractor and we do run the risk of losing people. We're concerned about travel time and how to minimize it, but I guess that's all I can say.

MR. CAMPBELL: I'm struggling with it again from another perspective both from the standpoint of the university and from the standpoint that my son has stumbled on it twice and I'm concerned about that. The main thing I haven't heard so far in those comments is the number of questions that are on each of

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those three exams, and how the reputation is growing that it's somewhat of a lottery rather than something that they are comfortable that they studied enough for.

MR. NEVILLE S. HENDERSON: We've been struggling with that ourselves. It's true that each exam is smaller. We have been trying to structure the exams so that each has a reasonable cross-section of questions. We expect well-prepared candidates to answer a fair number of them and that will give us a reasonable differentiation between candidates. We haven't been entirely successful to this point but results for the last set of exams, in fact, look better.

MR. PERROTT: We have increased the number of questions and reduced the difficulty on at least two of the three old Part 3 subjects. We have taken this action to address exactly that problem. Each exam now has a minimum of fifteen questions.

MR. MARK S. SELIBER: My specific concern is on the equivalent of the old Parts 3 and 5. I think the type of students who might be hurt the most are the slightly better than average students who in the past, passed Part 3 or 5 the first time; now they're passing two out of three, two out of four or three out of four. It's going to take them an extra six months to complete that particular exam. I would recommend that people who sit for all three of the Part 3 subjects or all parts of 5, who would have done well enough overall and beat the minimum standards on each part under the old system receive full credit for the exam even if on each individual part they might not get the full passing grade for that particular exam.

MR. PERROTT: I'd like to address that because it comes very close to something I'm working on and I want to use this as an opportunity to get the feeling of the people in the room. One possible approach to encourage students to take more parts seriously and to deal with that problem is some kind of a linkage structure. For example, we might adopt a rule that the minimum pass mark for any exam was a 5 but if you got a 7 or better on another exam at the same session, you could pass an exam you got a 5 on. For example, with two 5s and two 7s you would pass all four of the exams you took rather than two. (The old minimum standards incidentally are about at the 4 level.) The advantage of that is it encourages people to take more parts and it gets rid of some problems. The disadvantage is it means that not everyone has met the same standards on the exams they've passed.

I'll take a three-way vote to make sure it's working. The first show of hands I want is how many people in this room feel that linkage would be a good idea and it's worth it, that the pluses outweigh the minuses? And before you vote, listen to the other two questions. The second is the people who feel the opposite, and the third is people who don't understand what I've described. Let's start with the third one, how many people don't understand what I described? (No hands were raised.)

Given that we seem to understand the question, how many people favor it? About 30. How many people would oppose it? About the same. I appreciate your input. It's about what I expected. This is a controversial proposal. It has benefits, but it has disadvantages. Now, I'll yield to the gentleman who's been patiently sitting by the microphone.

CURRENT EDUCATION ISSUES FOR ACTUARIES

DR. JEAN LEMAIRE*: Could you bring us up to date on the latest developments concerning the other FEM proposals, namely the Applied Statistics seminar and college credit?

MR. PERROTT: Certainly. We have a proposal for an Intensive Seminar in statistics that is moving forward. It is likely that we will first administer that in August of next year. It will be taught by Ed Frees of the University of Wisconsin who is both a Ph.D and an FSA. It will follow the outline in the White Paper; the prerequisite to take the seminar is to have passed Course 120. The seminar will be ten credits. It will be one intense week. It's not intended to be a forty-hour week. It's intended that from Monday morning until some time Friday afternoon, you eat, drink and sleep applied statistics.

With respect to college credit, we are moving ahead on that but at a slower rate. Our original schedule was to implement that for the 1990-1991 academic year. We have deferred that to 1991-1992. There are a limited number of things we can work on and we had to prioritize them.

FROM THE FLOOR: I realize that the changes in the Fellowship exams will not occur overnight. It probably takes four or five years. But my feeling -- and I've talked to a lot of Associates who are writing Fellowship exams -- is that there is too much emphasis on memorization. I understand that we cannot get away from memorization completely, but there should be more emphasis on the applications of concepts. I'm not convinced that what I read in the syllabus is going to do that.

MR. PERROTT: There's no question that a problem with Fellowship exams is that a lot of the questions are memorization and regurgitation. We are working actively now to try to change that although in the real world I'm not sure how effective we'll be. It's unfortunately a fact that memorization questions are easiest to set and easiest to grade and it's difficult to get the 400 or so E&E Committee members to set non-regurgitation questions.

We had a training session on Sunday (October 23) for new E&E Committee members where one of the things we were trying to show them is how to take what would have been a memorization question and at least turn it into an integration or an application question. But we certainly would like to move to more application and integration types of questions, although at a gradual rate because rapid motion in the examination causes great concern among the students.

MR. HENDERSON: Just a few minor points on that. Besides being easier to set and easier to grade, we've often found that regurgitation type questions also tend to differentiate candidates better. Some of the questions we ask that focus specifically on concepts either leave the candidates completely cold, or we get a few candidates who give us some very good answers and get full marks. So, there's no differentiation of candidates. That doesn't mean we're forsaking the idea of conceptual questions. The process is a difficult one. I don't think you're going to see it change quickly. I do sense that we've had some improvement over the last sittings of exams.

FROM THE FLOOR: Any time frame?

* Dr. Lemaire, not a member of the Society, is Professor at the University of Pennsylvania in Medford, New Jersey.

OPEN FORUM

MR. HENDERSON: Well, it's a constant effort. To some extent, to study material in the way it's structured can limit your ability to ask that type of question. There's no specific time frame. We're just going to keep pushing.

DR. BRENDER: Could you comment perhaps on what new courses we might expect on the Associateship level? Will more electives, on the Fellowship level? I've heard whispers of an Investment track, how is that coming?

MS. MILNES: The Investment Section has an education committee that is working on developing investment study material. They're starting by reviewing the investment material that's on the syllabus right now; they plan to develop courses and they hope eventually to develop a track. There's no saying how long that might take. I think it will be several years before you see any kind of a full-blown track but it's fairly likely that some sort of an elective course could be added as soon as they develop material, provided there's enough interest in it. We can't really offer courses if no one's going to take them.

MR. PERROTT: In responding to your Associateship question, the most likely next courses are elective courses in the Associateship syllabus; they will be parts of the present Casualty Part 4 exam which the CAS is planning to split into several parts in 1990 or 1991. When they do that, we expect to give credit for credibility and for loss distributions, which do not overlap our syllabus. We would not give credit for their life contingencies part which is very clearly a subset of ours.

MS. ANNE M. KATCHER: In many of the speeches that we've heard this past year about the actuary of the future and the future of the actuary, we've heard that we're producing very strong technical actuaries but that we still need to work a lot on management skills if our new Fellows are going to move up into the ranks of senior management. And I'm wondering if there's been any consideration of introductory management techniques in this FAC?

MR. PERROTT: We certainly considered adding management topics to the examinations and to the FAC. We feel the amount of actuarial material that's necessary to examine actuaries on to assure an adequate education is more than we would really like to test. Rather than offering management-type seminars ourselves (other than professional ethics, which can get very close to a management seminar in its own right), new Fellows need to look to organizations already offering those courses or get them through their companies' education systems or on their own. We can't be all things to all people unless we're willing to have it take twenty-five years to become an FSA.

MR. MICHAEL S. KIRSH: Gary Corbett mentioned in his speech that he hopes that as much as half of the material in the syllabus will eventually be available through sources other than the Society exams; he mentioned specifically accounting and economics, which of course are on the Fellowship exams. Are there any current Fellowship exams that you would anticipate being available through methods other than Society exams within the next five years?

MR. PERROTT: Currently, 30 units of elective credit on the Fellowship syllabus are available for research papers. I anticipate that at some point in the fairly near future some credit would be given for designations of other bodies, for example for Certified Financial Analysts. Other than that, there are no plans at the moment to provide alternatives to the Society exams for the Fellowship topics.